NOVEMBER
1951

fueloil & oil heat

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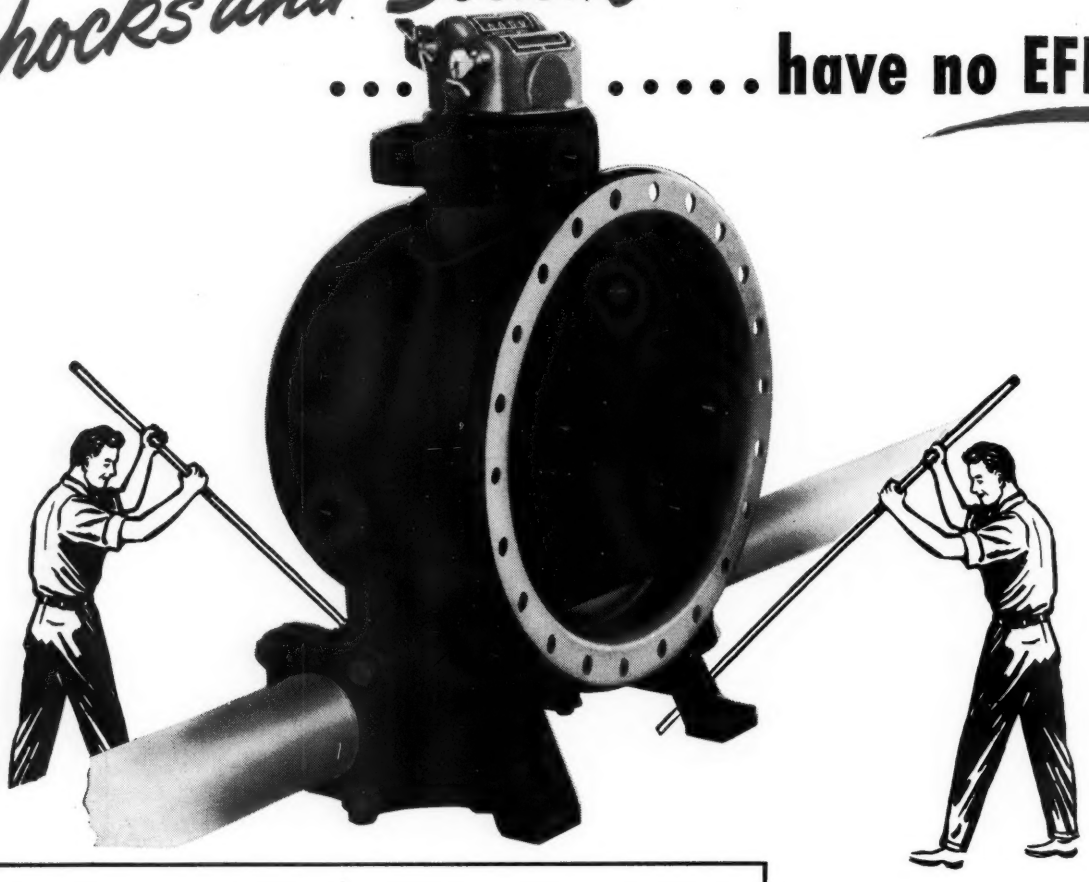
Shocks and Strain

. . . . . have no EFFECT



. . . . on the Accuracy or Performance of Brodie *BiRotor* Meters

. . . . . And here's why.

• Brodie BiRotor Meter measuring units are **fully self-contained** within a compact unit-built assembly.

• They are securely mounted in a rugged **welded all steel meter housing,** that withstands pressure, shocks, surges, impacts, and strain.

• They employ no complex reciprocating parts to wear, or get out of adjustment.

• All components are made to the highest standards of precision.

Investigate Brodie BiRotor Meters, today.
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BRODIE ALL-STEEL BiRotor TRUE-ROTARY METERS

RALPH N. BRODIE CO., INC. • 61st & LOWELL STREETS, OAKLAND 8, CALIFORNIA, U.S.A.

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221 9th AVE., N. SEATTLE 9, WASH. • 2101 S. SAN PEDRO, LOS ANGELES 11, CALIF. • *REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES*

NOVEMBER fueloil & oilheat 1951

VOLUME 10 NUMBER 11

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MEMBER CCA

YEARLY: $3.00

CANADIAN: $4.00

SINGLE COPY: 35¢

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PUBLISHED MONTHLY

BY HEATING PUBLISHERS, INC., PUBLICATION OFFICE: 109 MARKET PLACE, BALTIMORE 2, MD. EDITORIAL AND ADVERTISING OFFICES: 232 MADISON AVE., NEW YORK 16, N. Y., SUCCESSOR TO FUELOIL JOURNAL (1922) AND AIR CONDITIONING & OIL HEAT (1928), NOVEMBER, 1951.

ENTERED AS SECOND CLASS MATTER AT THE POST OFFICE AT BALTIMORE, MD.

LEOD D. BECKER, *Chairman, Board of Directors*

ROBERT GRAY, *Editor* — BERT DUNPHY, *Assistant Editor* — A. G. WINKLER, *Advertising Manager*

New York Telephone: LExington 2-4566

Lee Steedle, Assistant Advertising Manager

Mid-West Manager: Harold J. Hannigan
549 W. Washington Blvd., Chicago 6 Phone: Financial 6-3221

Pacific Coast Representative: Don Harway
1709 West 8th St., Los Angeles 14, Cal. Phone: Dunkirk 2-8576

Among other things . . .

The cover picture this month shows the new fluid catalytic cracking unit just put in operation by Gulf at Port Arthur. With 60,000 BD capacity it's the largest yet.

The lead story this issue has an interesting slant on rewards for selling. The author finds that various kinds of recognition for a good job done are just as effective as cash to stimulate sales effort.

For another unusual type of article there is a description of what the New York vocational schools are starting to do for oilheating. You'd be surprised to learn how much other industries are doing to convince teen-agers to select their particular fields for life careers. It is hard for an oilheating man to get excited about people he can hire in five years, but maybe it's time to start some long range thinking . . . manpower is our toughest problem.

A few more of the useful ideas from the summer contest are in the issue . . . there are a lot more to come later.

4 down 5 yds. to go

. . . numbers make it clear

Through habit, people grasp a situation at a glance — by numbers. Custom has made *numbers* the accepted method that measures and explains . . . quickly, accurately. It is the modern method, the method people everywhere prefer — the method they expect.

When home owners check their oil supply they want to know how many gallons they have left. Numbers tell them instantly . . . correctly. And when they want to estimate how much oil they use, numbers make it easy. Only *Galongage* tells the story the simple, easy way to which people are accustomed.

Remember, the gauge is the part of an installation your customers see most often. So do credit to a first-class installation. Be sure you follow through by supplying the *Galongage*.

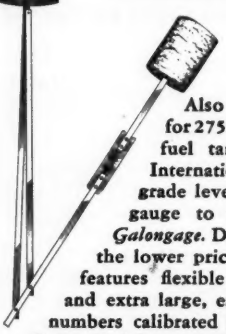
Where price is of prime importance, use *International*, the best in lever arm type gauges — outstanding in appearance and performance. Assembled oil-tight at the factory, *International* saves installation time and eliminates the possibility of leakage due to "on-the-job" assemblies.

Gauges by Applied Mechanics Company have a long standing reputation for accuracy and dependability. Efficient quality construction practically eliminates unprofitable service calls and bothersome adjustments.

Write today for full particulars.

GALONGAGE The only gauge generally used that measures in gallons. Designed to meet the most exacting requirements and do credit to the finest installation. Comes fully assembled to save installation charges. Calibrated for each standard size 275-250 and 220-gallon tank with depths of 44", 42", 27" and 26", with 1½" or 2" tank openings.

INTERNATIONAL



Also calibrated for 275-gallon size fuel tanks is the International, a high grade lever arm type gauge to team with *Galongage*. Designed for the lower priced field, it features flexible float arm and extra large, easy-to-read numbers calibrated in eighths. Built oil-tight at the factory for immediate and easy installation.

APPLIED MECHANICS COMPANY

167 OLIVER STREET, BOSTON 10, Mass.

Names in the News

C. L. White has joined Fluid Systems, Inc., New Haven 14, Conn. as manager of its Oilburner Application Engineering Dept. White for the past five years a combustion engineer and staff consultant for Socony-Vacuum Company's Technical Service Laboratories, Brooklyn, N. Y., has been in the oilburner business since 1924, dealing with light and heavy oil equipment, applications and maintenance. In his new position he will supervise sales of Thermal Electric preheaters to manufacurers, dealers and users of residual oilburning equipment.

Ray G. Pinkerton has become sales manager of The Peerless Heater Div., Eastern Foundry Co., Boyertown, Pa., in charge of the sales of boilers and tank heaters. He formerly had been associated with Eureka-Williams Corp., Bloomington, Ill., as manager of unit sales.

George A. Fricke, formerly with Griscom-Russell Co., has joined the staff of Superior Combustion Industries, Inc., as manager of its Heat Exchanger Div. He will direct the activities of his department from the company's executive offices in New York.

Ralph S. Brenan has been named New York branch sales manager by Burnham Corp., Boiler Div., Irvington, N. Y. He formerly had been with

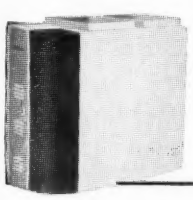
Here's why you make more money with a Fluid Heat Franchise

You get a Big, Complete Line ...for More Sales Advantages!

Famous Fluid Heat Wall Flame Rotary Burner. Two models with firing rates from ½ to 4½ gallons per hour.

Famous Fluid Heat Boiler Burner Units. Six models rated from 300 to 1090 sq. ft. of standing steam.

Famous Fluid Heat Pressure Burners. Four models with firing rates from 7/10 to 12 gallons per hour.



Famous Fluid Heat Winter Air Conditioning Furnaces. Seven models from 70,000 to 200,000 B.T.U. per hour.

You get a Fair, Square Deal from an Old, Established Manufacturer!

When you take advantage of a Fluid Heat Franchise, you're backed by a manufacturer who's been designing and building oil heating equipment for 29 years! You get full cooperation in merchandising and selling from capable and trained field representatives . . . and every product is backed to the hilt to assure you complete customer satisfaction!

Dealers everywhere prefer Fluid Heat!

Want to know why? Then just read this: "Fluid Heat gives me a complete line of Oil Burners that are easy to install and seldom need servicing . . . in fact you need only a screwdriver to accurately set the adjustment on Fluid Heat's exclusive air-regulating 'Fuel Saver' control. Non-coking stainless steel nozzles, and heavy-duty motors are additional features that add up to long, trouble-free life. You bet I value my Fluid Heat Franchise!"

fluid heat
AUTOMATIC HEATING

MAIL COUPON NOW for full information!

Fluid Heat Division, ANCHOR POST PRODUCTS, Inc.
6700 Eastern Ave., Baltimore 24, Md.

Gentlemen: Send me Details on a Fluid Heat Dealer Franchise.

Name.....Firm.....

Address.....

City.....Zone.....State.....

Richardson & Boynton for many years as New England sales manager and more recently was assistant sales manager for the Lycoming-Spencer Div., Avco Mfg. Corp.

Thomas F. McGarey, regional manager, Middle Atlantic States Div., Cities Service Oil Co., addressed the Atlantic City Rotary Club on October 16. His talk, delivered during Oil Progress Week, discussed "Free Enterprise" and how the oil industry has grown under this system.

J. H. Rasmussen has been appointed vice-president in charge of sales of all cooking and heating appliances made by Perfection Stove Co., Cleveland. *C. H. Foulds* continues as vice-president in charge of contract and automotive sales for the company. Rasmussen has had long experience in the appliance field, starting in 1925 when he was associated with Sterling Radio Co., Kansas City. After holding sales positions with other radio companies, he organized his own company in 1947 to act as manufacturers representatives in Chicago for nationally-known brands of water heaters, air conditioning systems, radios and television sets.

James M. Darnell has been appointed assistant sales promotion manager, U. S. Machine Corp., Lebanon, Ind. He had been with the company in 1942 as an inspector for finished war materials and in 1944 was made assistant advertising manager. He left in May of 1946 to represent a homes furnishing firm and now is planning to re-establish residence, with his family, at Lebanon.

A. J. Kerr, vice-president of meter and valve sales, Rockwell Mfg. Co., Pittsburgh 8, Pa., has been appointed chief, Valves and Fittings Branch, General Components Div., National Production Authority. He will work under Eugene S. McCarthy, director of the Division, and succeeds Charles W. Burrage, who is returning to The Lunkenheimer Co., Cincinnati.

W. C. *McTarnahan,* honorary chairman of the board, Petroleum Heat & Power Co., Stamford, Conn., died in the Harkness Pavilion of the Columbia-Presbyterian Medical Center, New York, on October 18. In 1920, with M. A. Fessler, an inventor, McTarnahan organized the Fess Rotary Oil Burner Co. and in 1925 he became head of Petroleum Heat and Power, successor company to Fess. He was Petro's president for the next 20 years, then chairman of the board until he assumed the honorary position early this year. He also had been president of the Pearl River Development Co. and the Fuel Oil Association of New York. He is survived by a wife, Mrs. Grace Taber McTarnahan; a son and a grandson.

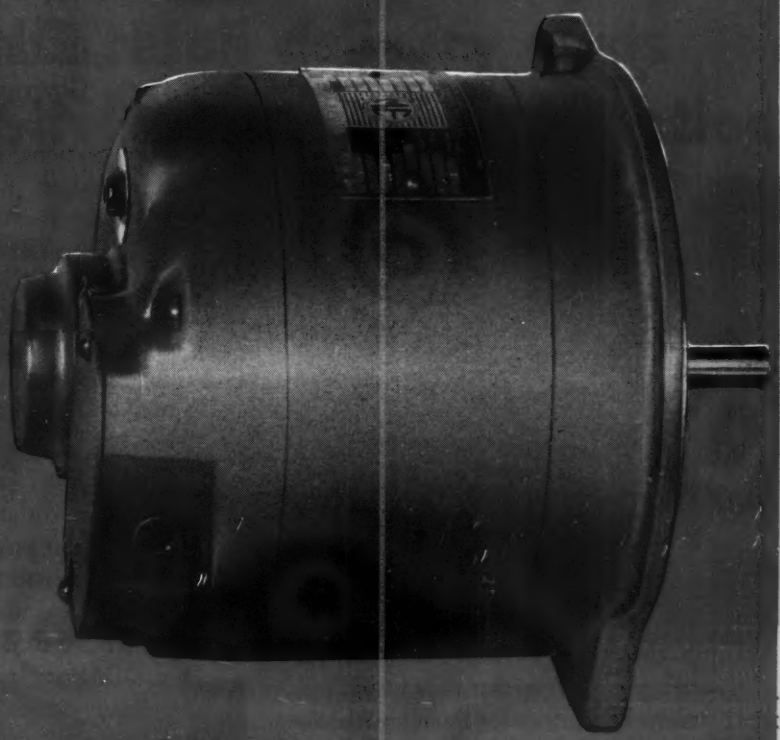
PLEASE, BE MY
"SILENT-FLAME"
SILENT-FLAME
Silent-Flame
TOMORROW'S OIL BURNER TODAY!
with the new "DUAL"
TELESCOPIC TURBULATION
as standard equipment. No extra charge. [NOT a combustion head]
APPROVED by the Underwriters' Laboratories; Board of Standards and Appeals, New York City; City of Yonkers; City of Mount Vernon; Commonwealth of Massachusetts, Department of Public Safety, City of Philadelphia, etc.; also in Iceland, Holland, Belgium, Norway, Sweden, Denmark, Switzerland, Mexico, Panama, Colombia, Brazil, Argentina, etc.
U. S. Patents No. 2,570,996, 2,497,480
Canadian Patent 469,767
and Patents Pending
Ask for and Demand Silent-Flame Oil Burners at Your Local Jobber
SILENT-FLAME MFG. CO., INC.
807 Zerega Avenue
New York 72, N. Y.

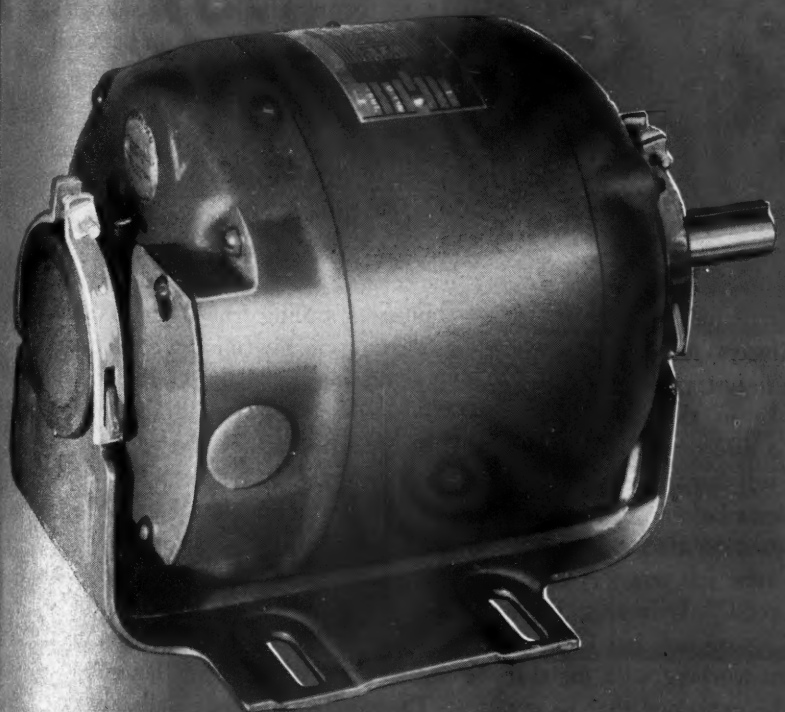
MARATHON MOTORS...

FOR *better* HEATING...
longer SERVICE...

OIL BURNER MOTORS

• Twenty years of experience in building oil burner motors enables Marathon to offer the finest oil burner motor on the market today. These motors are built in all sizes and types to meet the needs of domestic, commercial and industrial applications. Special features and designs are furnished for particular installation requirements.





BLOWER MOTORS

• Marathon's long and successful experience with all varieties of air circulators has resulted in motors which meet every specification set up by the blower industry. These motors are available with either rigid or live rubber mounting and can be modified to meet every specific application requirement.

MARATHON ELECTRIC MANUFACTURING CORP. WAUSAU, WISCONSIN

MARATHON ELECTRIC MANUFACTURING CORP.

WAUSAU • WISCONSIN

OFFICES IN PRINCIPAL CITIES

NATION-WIDE SERVICE COVERAGE

Editorial Leaks

DURING THE PAST few months Government oil men several times have mentioned the subject of rationing petroleum products. They have said nothing very definite about it, and in fact rationing has been mentioned mostly in connection with the oil industry's inability to get all of the steel it wants for expansion.

Because oilheating men are concerned, it is well to line up the facts. There is definitely no rationing in sight short of a full scale war, which few expect. The Petroleum Administration is preparing a rationing program in a simple outline form, to keep on the shelf. A top official of the agency points out that they would certainly be in the dog house with the public if the big shooting started and no program was ready.

The fueloil program will apparently be similar to the one used in World War II, so far as the fueloil user is concerned but somewhat different in the industry operating phase.

❖

WHILE THERE IS a strong probability that fueloil prices along the East Coast will be up a half cent before you read this, we are not sure that all of the desired results will follow.

At midwinter the charter tanker rates go sky high. The Government refuses to control these rates because ocean commerce, they say, is international and there would be too many complications.

In raising fueloil prices a half cent the fueloil shippers would, in theory, spread the extra profit across all of the year's business so that they could afford to stand heavy losses on a few tanker loads in the winter. Some shippers will do it that way in the public interest, some won't.

We prefer the subsidy arrangement that was considered and shelved. It would not be an oil industry subsidy . . . rather a shipping subsidy. Shipping is an important part of oil cost. If you can't control one part of the cost, how can you effectively control selling price and also be sure of getting the product to the consumers when they want it?

To us it's plain as the nose on your face. If the Government refuses to control tankers because of international complications, that should not be a consideration in domestic commerce. To keep fueloil flowing freely in the public interest there should be no important fluctuations in tanker hauling costs.

A tanker buyer operates normally on a margin of .35¢ to .45¢, depending on discounts. If tanker rates go as high this winter as last, some cargoes will represent a net loss of more than a cent a gallon to the oil man.

So the half cent price rise is not the permanent answer to the problem, although it will help some. Perhaps it's the best that can be done for this season, but Government should definitely make longer range plans on a more solid and equitable footing.

❖

OIL INDUSTRY publications have had a lot to say about R. F. "Flake" Baity, marketing vice-president of Indiana Standard, who died September 30 at the youthful age of 53. We too have an incident to relate about Flake.

It was in 1947 at the Hotel Nicollet in Minneapolis. He had just been elected a director and put in charge of all sales. Always just "one of the boys" to the industry, it was hard to visualize Flake in the pompous atmosphere of a directors' table. It was the end of a full day so we asked him to relax with us before dinner.

The first question after congratulations on the new job was, "Are you really that good?" Grinning, Flake replied, "Of course not, but I have a bunch of men working with me that are." Then he explained that he got credit for all of the original and effective thinking in his shop, credit for gains in sales . . . and since they couldn't put the whole sales department into one director's chair they let him sit in as their spokesman.

Little wonder he's been in all the publications. What a man!

❖

CHASING AROUND Washington the other day we walked in on Don Leslie, ex-Torrington Mfg. and ex-chairman of OHI's Accessory Division. Don is now chairman of the Procurement Policy Committee of the Defense Production Administration. It's one of the hottest seats in town.

All that his committee has to do is to evaluate procurement policy as between military and civilian requirements, with special emphasis on shifting manufacturing facilities from one side to the other. Pressure both ways is intense.

Don expects to come back to our industry after his present incarceration. His Washington experience with pressure tactics will be valuable down the road.

❖

GAS EXPLOSIONS IN a suburb of Rochester, N. Y., wrecked a couple dozen homes and killed several occupants last month. Thanks very much to industry friends who sent us all the clippings and the pictures. We decided not to feature the event because it's too much like capitalizing on personal tragedies.

❖

L. T. WHITE of Cities Service has some entertaining stories of his early day experiences as a salesman in Canada. He was trying to interest folks in electric cooking stoves and other electrical appliances, calling from door to door.

Turning on his full company manners and literally charming the housewife with the glories of his wares, he would break off after each two or three sentences and excuse himself to cough.

As the interview built up, the coughing became more persistent and raucous until L.T. with a surprised expression saw the light. "Oh, I know what it is now," he'd exclaim, "you've got gas burning somewhere in the house."

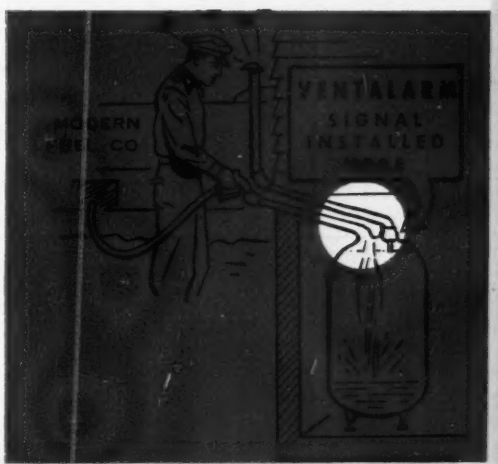
The gas company, he recalls, always had a caged canary right above a burning cookstove flame in its showroom, but there was a whole flock of them in the basement for frequent changes.

SCULLY FUEL OIL DELIVERY AIDS

Prime Essentials for

REDUCING retail delivery costs
INCREASING customer satisfaction

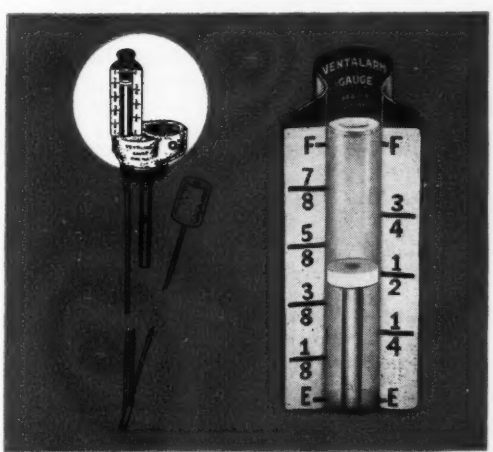
VENTALARM®
WHISTLING TANK FILL SIGNAL



You can save up to 30% of your delivery costs by equipping your old and new tanks with the VENTALARM Whistling Tank Fill Signal. Easily installed directly on the fuel oil tank as an integral part of the vent pipe. From then on, you *just fill 'til the whistle stops.* Eliminates spills, simplifies degree-day work, saves 5 minutes per drop. Provides the customer with the convenience of *automatic* oil delivery.

Models for all vent pipe sizes on both new and old tanks.

VENTALARM®
GAUGE



Two units in one—VENTALARM Signal *in combination with* a super-visible Tank Gauge. Every benefit of the fill signal for you and your customers, plus a gauge so simple and so clear that a child can take an accurate reading even from a distance of 10 feet. Can be safely and quickly installed with or without oil in the tank. Jam-proof assembly. Approved by Underwriters' Laboratories, Inc.

Available for 275 gal. cellar tanks with depths of 24", 26", 27", 42", 44" and 47". Specify tank depth and tank opening when ordering.

FASFILL®
CONNECTOR

Portable hand-tight connection for nozzle and fill pipes of all sizes. Nothing to change on the nozzle or fill pipe. No tools involved. Diaphragm head holds nozzle. Speeds deliveries, eliminates blowbacks, saves time and labor.

All Scully products are protected by U.S. and Foreign Patents or Patents Pending.

See your regular Supply House or write for information to . . .

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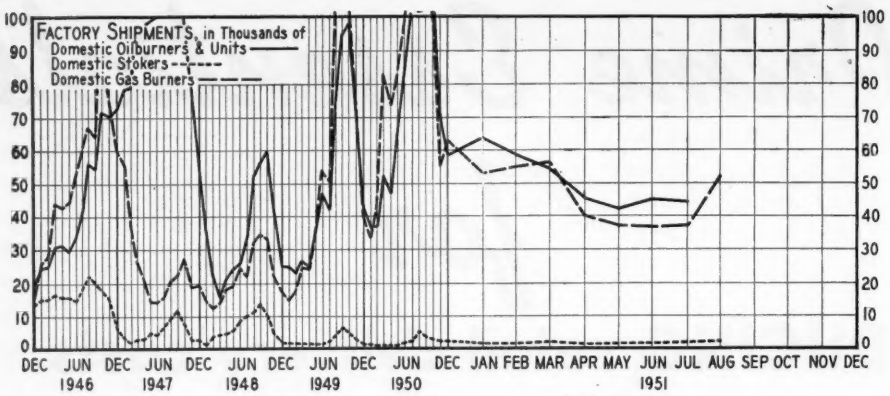
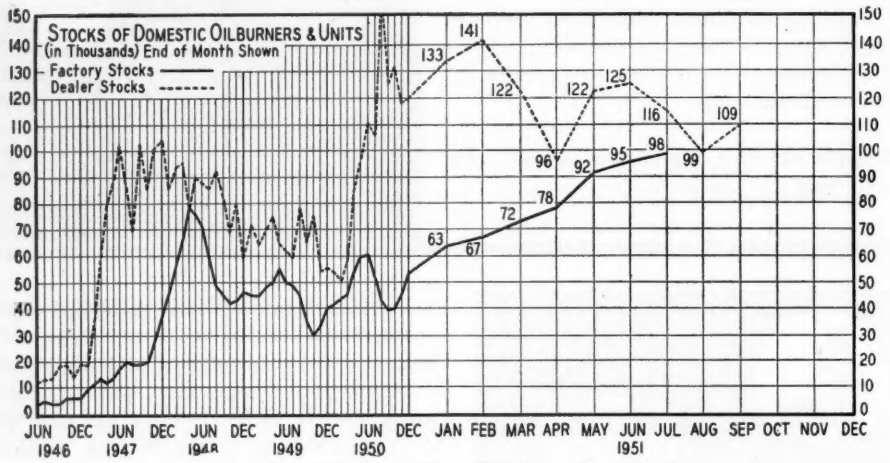

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
Domestic Gas Burners
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1946 1947 1948 1949 1950 1951

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	JULY			SEVEN MONTHS		
	1951	*1950*	*Percent Change*	*1951*	*1950*	*Percent Change*
Conversion	30,897	70,552	—56.2	249,925	303,822	—17.7
Boiler Units	3,142	9,870	—68.1	32,461	41,918	—22.5
Furnace Units	9,972	20,615	—51.6	73,154	75,006	— 2.4
All Domestic	44,011	101,037	—56.4	355,540	420,746	—15.5
Commercial	3,361	2,811	+19.5	25,003	15,953	+56.7
Total	47,372	103,848	—54.4	380,543	436,699	—12.8



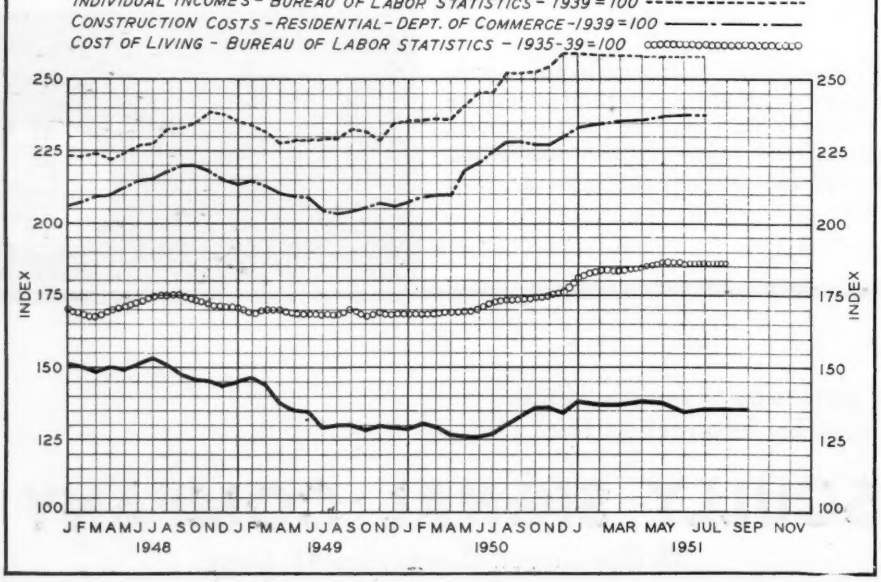
September Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE BURNERS
September Aver.	$332	$688	$630
August Aver.	333	695	627

Price Index: Conversion Burners: January 1940 is 100%

	WHOLESALE				RETAIL			
September	137.5	Six months ago	137.0	September	136.4	Six months ago	137.1
August	135.7	Year ago	127.8	August	136.3	Year ago	133.3

OILBURNER PRICES COMPARED TO GENERAL INDEXES


OILBURNER PRICES - RETAIL CONVERSION BURNER - JAN. 1940 = 100
INDIVIDUAL INCOMES - BUREAU OF LABOR STATISTICS - 1939 = 100
CONSTRUCTION COSTS - RESIDENTIAL - DEPT. OF COMMERCE - 1939 = 100
COST OF LIVING - BUREAU OF LABOR STATISTICS - 1935-39 = 100
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1948 1949 1950 1951

Oilheating Trends

SEPTEMBER made a much better showing in oilburner installations than any month since February, by comparison with the previous year. Estimated installations of domestic oilburners and units during the month were 97,022 compared with 102,817 in September 1950, showing a drop of less than 6%. The installations were divided: New homes 28,205; Replacements of old oilburners 11,772; Conversions from other fuels 57,045.

Total installations for nine months this year are estimated at 463,993 compared with 566,992 in the same period last year, a decline of 18%.

BURNER STOCKS: Dealer stocks of domestic oilburners and units on October 1 were approximately 109,030, a substantial rise from the previous month when they were 98,786. On the same date a year ago they were estimated at 124,291. Factory stocks on July 31, the latest available date, were 98,058.

TANK STOCKS: Dealers dipped into their tank inventories during September, ending the month with approximately 112,958, compared with 139,382 at the start. A year ago they were 90,923. For the country as a whole the average tank price went up $1 during the month to $43 for the 275 gallon size. In New England there appears to be growing competition to sell tanks because the price dropped during the month from an average of $41 to $38. This was influenced by the figures of several large dealers who were paying as little as $35. In other sections of the country tank prices went up, closing the month in Mid-Atlantic states at a $45 average, in the Midwest at $42, and in the Pacific Northwest at $47.

SWITCHED FROM GAS: Among the September installations throughout the country approximately 2,770 were made for families that had planned to install gas heating but changed their thinking to oil either because of restrictions on gas installations or unfavorable gas publicity. This represents only about 3% of the oilburner installations but the figure will become larger as time goes on. It is too early to see much result of the general gas

WHO CAN MATCH THE NEW

Combustioneer®

LOW PRESSURE⊙ OIL BURNER

EXCLUSIVE Combustioneer FEATURES!

- "A flip of the finger" selects required oil capacity from .65 to 3.0 GPH with burner operating.
- No pistons to change.
- No pumps to add or change.
- Secondary air, and oil capacity adjustable while burner is running.
- No lift pump required for outside tank installations.
- No special high speed motor—standard motor used.
- Simple full floating, hydraulically operated piston—no linkage to wear.
- Interchangeable from low to high, or high to low pressure.

MODEL d LP⊙

15 YEAR NOZZLE GUARANTEE

Clog-proof nozzle. Nozzle opening is 30 to 40 times larger than any h.p. nozzles.

The amazingly different **Combustioneer d LP** (low pressure) oil burner has a capacity range from .65 to 3.0 gph. Features a completely new hydraulically operated compound air and oil metering pump with one moving part—*utilizing a free floating piston which floats in a bath of oil.* Operates equally well with inside, outside, or single or double line tank installations—*no extra pump or parts need to be added.* Two hydraulically operated safety shut off valves—*one for the nozzle, the other for the tank.* No other oil burner has *Triple Velocity Visorhead**—three velocity carburetion. Underwriters' Laboratories approved to burn all *domestic fuel oils.*

When you sell Combustioneer products, you offer unmatched quality and dependability, at a competitive price.

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Combustioneer was the ONLY oil-burner manufacturer to receive an AWARD at the 1951 National O.H.I. Exposition!

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Combustioneer GAS BURNERS, HIGH AND LOW PRESSURE OIL BURNERS, STOKERS, COAL-GAS-OIL FURNACES, AND HUMIDIFIERS

TVV*

- High velocity air above nozzle, deflected downward by visorhead.
- Swirling velocity around nozzle thoroughly intermixes oil with air.
- Low velocity below nozzle permits downward deflection.

Combustioneer DIVISION
THE STEEL PRODUCTS ENGINEERING COMPANY
SPRINGFIELD, OHIO

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restriction order since it only went into effect on August 22 and there was a great deal of gas heating business under commitment at that date.

DUAL-FUEL BURNERS: Combination oil and gas burners have been widely used for commercial and industrial installations in some parts of the country for several years. However, these have made little headway in the domestic field. A number of men in the industry have been asking about their significance, so a check of the reporting group was made this month. Dealers from only three Midwest cities reported having such equipment in their communities. They estimated the total number operating in those three cities at 551. The general industry consensus is that the total number in use is somewhere between 2,000 and 3,000. Neither the fueloil distributors nor the gas utilities seem very enthusiastic about them, so they probably will not become important outside of a half dozen cities.

BULK PLANT PUMPS: We were asked to check industry habits as to types of pumps they use at the bulk plants of fueloil distributors. The figures reported indicate that about 53% of such pumps in use are of the rotary type and the other 47% are centrifugal. There seems to be a great variety in pumping capacities. Among all pumps reported, 13% are under 100 Gpm; 22% pump between 100 and 199 Gpm; 17% are between 200 and 299 Gpm; 29% pump 300 Gpm; the remaining 19% have capacities above 300 Gpm.

One company in the list, reporting 17 bulk plant pumps, operates them at an output rate of 2000 Gpm.

FUELOIL RESTRICTIONS: On October 1 fueloil distributors who have been restricted on the amount of fueloil they can get this winter from their regular suppliers numbered 44% of all the reporting companies. The restrictions were strongest in the New England and Mid-Atlantic areas where the suppliers still have the problem of how to handle exorbitant tanker rates at the winter peak. From these figures we see that only 56% have been told that they can get all they want from their regular suppliers. An additional 25% of those reporting believe that they can get all that they will need from other suppliers in the open market. That leaves 19% of the reporting companies still in the dark as to how they are going to take care of their customers. This is not a matter of fueloil supply, which appears to be plentiful at this stage. It is a matter of transportation economics. It is hard to criticize a supplier for not wanting to ship in to the East Coast fueloil that he knows will cost him more delivered than he can get for it. Several solutions

(*Please turn to page 159*)

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
September		9 MONTHS			*September*		9 MONTHS	
1951	*1950*	*1951*	*1950*		*1951*	*1950*	*1951*	*1950*
50	190	507	793	Albany, New York	..	..	..	..
307	327	2279	3729	Baltimore, Maryland	205	192	3763	1363
..	..	..	..	Binghamton, New York	15	16	95	116
..	..	..	..	Bloomfield, N. J.	7	7	95	170
..	..	..	..	Boston, Mass.	27	19	346	244
110	195	739	876	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, New York	48	55	430	549
18	4	79	19	Columbus, Ohio	..	..	..	..
..	..	..	..	Des Moines, Iowa	46	149	688	1407
828	103	3764	1018	Detroit, Michigan	538	462	5342	10271
43	70	421	537	Elizabeth, N. J.	6	3	43	48
35	42	304	394	Freeport, New York	..	..	..	..
..	..	..	..	Greenwich, Conn.	43	40	342	322
..	..	..	..	Hackensack, N. J.	17	10	95	170
150	84	1328	1174	Hartford, Conn.	..	..	..	..
..	..	..	..	Hudson County, N. J.	..	..	..	..
46	61	332	477	Irvington, N. J.	6	1	43	43
..	..	..	..	Lynn, Massachusetts	13	8	104	145
2	10	233	441	Meriden, Conn.	..	..	..	..
..	284	..	2270	Milwaukee, Wisc.	..	280	..	2819
71	153	559	749	Minneapolis, Minn.	129	184	1138	1730
36	54	208	279	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	13	2	22	26
34	51	229	394	Mt. Vernon, New York	..	..	..	..
223	281	1405	1877	Newark, New Jersey	..	..	..	..
94	48	524	765	New Bedford, Mass.	..	..	..	..
49	67	400	477	New Haven, Conn.	..	..	..	..
..	..	..	..	New Orleans, La.	..	..	..	..
..	52	..	269	New Rochelle, N. Y.	16	8	121	146
..	3285	..	24824	New York City (total)	..	..	..	..
..	3146	..	19998	Brooklyn-Queens	..	..	..	..
663	139	4724	4826	Manhattan, Bronx, Rchd.	..	..	..	..
..	251	..	1078	Norfolk, Virginia	94	76	769	1042
..	..	..	..	Oakland, Calif.	..	..	..	..
79	230	610	855	Omaha, Nebraska	75	99	789	1293
21	51	169	229	Orange, New Jersey	0	2	33	16
43	38	199	310	Passaic, New Jersey	..	..	..	..
87	117	498	865	Paterson, N. J.	10	13	151	170
760	1608	6135	9759	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	28	14	146	268
81	80	469	430	Portland, Maine	7	17	132	200
538	696	3410	4553	Portland, Oregon	92	173	1185	2069
40	34	167	156	Poughkeepsie, N. Y.	..	..	..	..
110	116	676	537	Providence, R. I.	..	27	..	259
..	..	..	..	Reading, Pa.	10	7	68	66
38	164	528	805	Richmond, Virginia	51	51	506	605
78	81	531	890	Roanoke, Virginia	..	..	..	..
387	426	2001	2726	Rochester, N. Y.	..	..	..	..
26	27	198	271	Rockville Center, N. Y.	22	32	98	164
46	54	238	324	Salem, Massachusetts	12	2	68	70
388	24	1444	262	St. Louis, Missouri	119	90	541	842
121	264	565	1620	St. Paul, Minnesota	122	122	921	1368
46	66	532	524	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	144	216	1473	2214
..	..	..	..	Springfield, Mass.	86	51	609	588
48	93	456	751	Stamford, Conn.	..	..	..	..
..	14	..	109	Syracuse, New York	44	35	271	497
..	..	..	..	Trenton, New Jersey	7	4	59	53
..	..	..	..	Utica, New York	9	20	118	144
130	342	720	1353	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	42	36	298	348
57	52	287	271	White Plains, N. Y.	18	16	84	157
..	143	..	733	Wilmington, Delaware	21	17	203	217
171	411	1269	1814	Worcester, Mass.	..	..	..	..
64	122	502	683	Yonkers, New York	..	..	..	..
6118	6975	39639	48813	Totals	2142	2247	21189	29141
—12.3		—18.8		*Percent Change*	—4.6		—27.3	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

Today's best deal for dealers includes WARM AIR UNITS BY *Gilbarco*

Property owners want the utmost in *economical* automatic heat. You can offer that in Gilbarco oil-fired warm air furnaces or winter air conditioners — available in models for every type of installation. And they're easy to sell to your customers, because they feature such exclusive values as the patented Gilbarco Economy Clutch.

Be prepared to sell *any* type of heating job with Gilbarco oil heating equipment—domestic or commercial. **Some highly profitable franchises are still available in areas west of the Appalachians.**

GILBERT & BARKER MFG. COMPANY
West Springfield, Mass. • Toronto, Canada

CONVERSION BURNERS FOR OIL AND GAS • BOILER-BURNER UNITS • WARM AIR CONDITIONERS • INDUSTRIAL OIL BURNERS

Government Influences on Fuels

by
Milburn Petty

WASHINGTON—Office of Price Stabilization seems sympathetic with fuel oil marketers and now inclined to grant them long-awaited relief.

Increases in price ceilings—ranging up to 0.5¢ per gallon—for light fuel oils along the Atlantic Seaboard likely will be granted soon to offset rising tanker rates.

This would provide protection only up to tanker rates of USMC plus 25% (the same base used in figuring new residual price ceilings last June). However, OPS feels that, with the across-the-board increase, marketers could make up a good part of their deficit on sale of supplies purchased on a delivered basis.

Earlier, mid-western marketers were relieved in their margin "squeeze" by OPS allowing advances of 0.3¢ and 0.5¢ per gallon on kerosene, distillate fuel oil and diesel fuel in 12 states, effective October 30.

Last December, the voluntary "freeze" caught some larger suppliers —as well as independent marketers— with their tank wagon prices not reflecting the tank car rise of shortly before the "freeze" date.

Supply No Worse Than Last Year

On fuel oil supplies, PAD believes that the industry will come through with low inventories of civilian products—"but not any lower than last year's." This is based on today's conditions and normal weather for the next six months.

PAD Uses Directives on Residual

Secretary Chapman has issued Regulation No. 1 authorizing the petroleum administration to issue directives on delivery, receipt and use of petroleum products and gas.

Seemingly, these are far-reaching powers but PAD says it had such authority anyway from the Defense Production Act.

This authority was first used by PAD to direct four major refiners to supply Navy Special Fuel Oil. Fourteen others were then directed to supply these four with Bunker "C" Fuel Oil to make up their deficit resulting from diversion of production to Navy Special.

PAD Denies Marketers' Pleas

This prompted some New York fuel oil marketers to request that PAD make use of its directive powers to assure them of an adequate supply to meet their expected requirements.

The reply to their plea was that, unless there is an emergency or consumer shortage, PAD has no authority to do what they ask. When and if an overall shortage develops, PAD will deal with the situation then.

But if PAD waits until a shortage comes, it may be too late to help them, these marketers point out.

New 'Wherry Committee' Seen

Otis H. Ellis, counsel for the National Oil Jobbers Council, "fears" that the New York situation may bring on another oil investigation like that headed by Senator Wherry of Nebraska in the 1947-48 shortage. He says he hopes this won't be necessary.

Wherry's group developed a "formula" under which each supplier was asked to take care of the customers he supplied during the previous winter— both contract and spot buyers—and share with them pro rata any additional supplies left over after meeting government demands.

This plan was "enforced" by calling suppliers before the committee and pressuring them.

Meanwhile, the Federal Trade Commission has "cleared" with Department of Justice on FTC's proposed investigation of fuel oil distribution complaints concerning the Baltimore-Washington area.

It seems that some independent marketers have complained to the FTC that they have been unable to line up enough supplies without going to 100% branded operation.

Marketers Urge Oil Tariff Cut

Appearing at the U. S. Tariff Commission hearing on renegotiation of the Venezuelan Trade Agreement, representatives of independent marketers presented a solid front in favor of lower tariffs on foreign oil. The marketers took the position that import restrictions prevented a free flow of supplies. They pointed out that U. S. refiners can't meet the demands.

Independent producers argued for 30.5¢ tariff but would settle for a flat 21¢ per barrel duty. They don't object to foreign oil "supplementing" domestic supplies but fear the balance may shift again.

Coal witnesses would like a total ban on residual imports—a goal their group has sought for years, they said.

Gas Cut-Off Yardstick Sought

PAD is considering an order to determine which industrial consumers— supplied under interruptible contracts —should be cut off first from gas supplies in case a serious shortage develops. PAD would rather cut off gas consumers with coal standbys than those with an oil standby.

Gas Price Powers Face New Test

Now that the Federal Power Commission has denied a rehearing to the city of Milwaukee and other petitioners, the FPC's decision in the Phillips Case may soon be headed for the Supreme Court. FPC held it could not control gas prices at the wellhead.

'Gas Heat Denied to 1,500,000'

Senator Kerr of Oklahoma, author of the bill to ban specifically the FPC from control over independent producers and gatherers (including field prices) says the veto of his bill "will result this year in nearly 1,500,000 homes being denied the use of natural gas for heating."

Diesel Tax Rules to be Set

Ignoring warnings by the Senate that it would create a tax evasion problem, the House insisted—and prevailed—on putting back into the final version of the new tax bill the 2¢ per gallon tax on diesel fuel used in highway vehicles. It is both a "sales" tax and a "use" tax. Regulations may mean red-tape for heating oil marketers and their customers.

fueloil & oilheat

Sales Incentives are effective

And They needn't always be Cash; personal Recognition is important

by
William Sheppard

A FUELOIL AND OILBURNER dealer spends a lot of time, thought and money devising sales promotional programs which will increase his sales. He frets over his advertising budget. He wonders whether newspapers, radio, billboards or direct mail can do the best job for him. He considers advertising gadgets. He spends many a business hour trying to attract "better salesmen" to his company. He attempts trick methods to get leads. He constructs elaborate exhibits for home shows and fairs. No one can ever consider him lacking in an interest in promoting sales.

But I wonder if much of that time, thought and money is not wasted. I wonder if that dealer is not overlooking those "acres of diamonds in his own backyard."

It seems to me that the first and best place to practice sales promotion is right with your own sales force, right with the men who are with you now, turning in the orders which keep your business going.

What I am talking about can be classed under three headings:

1. Inspirational encouragement.
2. Additional financial incentive.
3. Sales contests.

Right off the bat let's answer one possible objection to this sales promotion idea. That objection could be worded this way: "Look, why worry about trying to pep up my sales force? My men are on a commission. They have to sell to eat. What more encouragement can they want than that?"

At first glance it would seem that commission salesmen have all the incentive they need. But it isn't enough. It just doesn't make us salesmen do our best work. We dig for those extra sales because of extra incentives—a pat on the back from the sales manager, the desire to be top man, winning out in a sales contest, a bonus that is ours if we meet our quota, the banquet which only the top men can attend, the pin to wear in my buttonhole which shows that I'm a star salesman, the television set which I can tell my friends I won for turning in the most sales, the write-up in the paper. I doubt if there is a successful sales organization in the country which does not encourage its salesmen with more than checks for sales they have made.

O.K. But what can be done about getting salesmen to land those extra couple of sales every week?

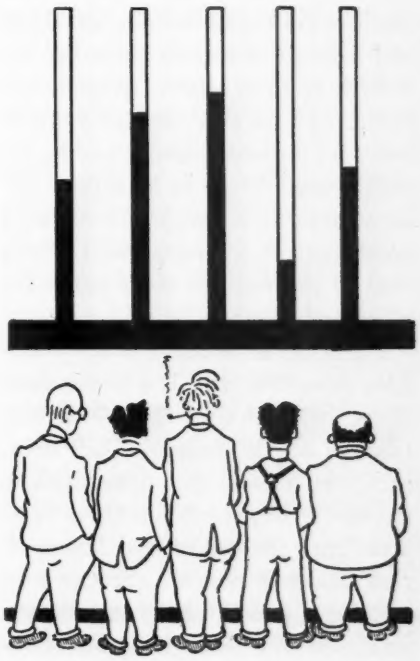
Let's look first at what I have called "inspirational encouragement." By that I mean much more than a pat on the back and a casual "Nice going, Joe." I mean that management should have the ability to make a salesman say to himself as he goes out for an order, "I know Harry will be pleased if I land this one" or "Harry will be plenty disappointed if I don't bring this one in." Strange as it may seem, most salesmen get a bigger kick out of pleasing someone else than they do themselves. They want recognition for a job well done. If they get it, they'll go out and do it again as soon as they can.

Besides encouragement and recognition from the sales manager, salesmen like their sales publicized at the office among their fellow salesmen and the other employees there. I know of one oilheating dealer who has an old-fashioned dinner bell on his desk. When sales are turned in to him, he rings it for all its worth. Everybody knows then that a salesman has done a job.

I know of another sales manager who gives an expensive necktie to the salesman who turns in the first sale of each week. Another has a small star which he pins on the lapel of the week's top salesman each Saturday morning. He has a small lemon which the low man must wear. You can be sure that his sales force is pushing to be the man to wear the star and to keep from being the man to wear the lemon. To them the pay check is almost incidental.

Another way to insure recognition is to have a "thermometer" for each man. Each man starts at zero at the start of each month. As he turns in sales, his dollar volume is marked on the thermometer in red crayon. That's favorable publicity for the producers and bad publicity for the low men. And all will keep their eyes on the thermometer.

The second heading above is "Additional financial incentive." That doesn't mean the annual Christmas bonus. It means that salesmen should be offered the opportunity to earn an extra incentive at the end of a month,



three months or six months period for exceeding a previously established quota. True, it means added cost to the dealer on those sales. But I wonder if it does add to his cost of doing business. I think that almost every dealer can afford to pay an extra percent or two to the men who sell, say, $2,500 worth of the products handled each month. In figuring on the regular commission which the dealer can afford he must take into consideration the cost of advertising for new salesmen, training them and perhaps advancing them money while they are getting started. Top salesmen bring down his sales overhead. They should be rewarded for it with a bonus arrangement which will usually give them the incentive to turn in more sales and that will, in turn, help the dealer more.

The quota which the salesmen must reach to earn their bonuses should be high enough to require effort but not so high as to be discouraging. It can be the same for every man or it can be lower for the new salesmen and higher for the stars. It can be figured on dollar volume or it can be done with a point system—so many points for a new oil customer, so many points for a burner sale, etc.

Publicity is effective with bonus sales promotion, too. If salesmen have desks, small, two or three inch high trophies can be bought. Then when each man crosses the quota mark, a trophy can be placed on his desk to remain until the end of that bonus period. Thermometers are effective here, too. Lapel pins can be given to quota makers to wear throughout the following bonus period. A banquet can be given for those who make their quotas. A little extra effort on the part of management will pay off big in results.

Sales contests are the supreme "shot in the arm." When run right, they can put new pep into a lagging sales group or they can bring in extra sales during "off-season" periods. When run wrong, sales contests can be a flop which can bring lasting damage to a sales force's morale.

The way to conduct a successful sales contest is to plan it fully in advance and then run it with a touch of showmanship that sells the idea to the men.

The most important thing to do is to make it a contest. Every sales force, it seems, has one or two star salesmen who lead the pack. If a contest does not take that fact into consideration, the other men are likely to figure that they haven't a chance at the start and so they don't get into the spirit of the promotion. The most popular way to cut the big producers down to evenness with the others is to average off the sales volume of each man for the last four months. Then let each man have to sell at least that average figure to get into the contest. After each one (or as many as make it) do that, then the salesman who sells the most above his quota wins the top prize.

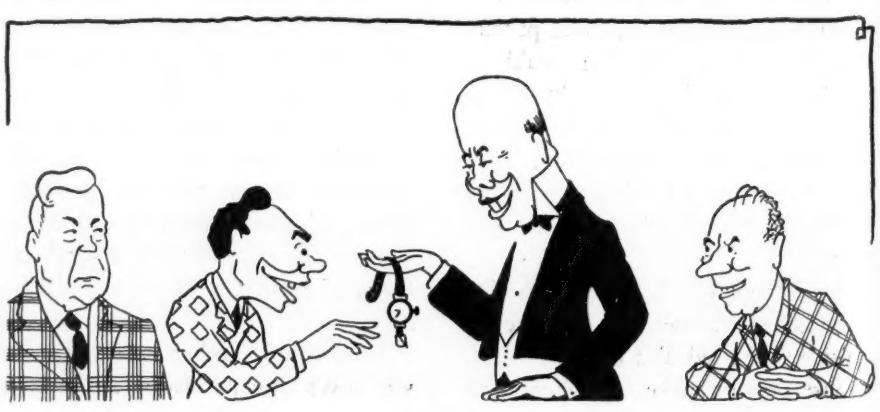
As a successful contest should provide every good producer with a prize, a plan often followed by oilheating dealers is to provide a nominal prize for every man who exceeds his quota. Then three top prizes are provided for the men who finish one, two, three. So that new salesmen can also win their "quota prize," a reasonable quota for each man not with the company four months should be arrived at individually. When each salesman feels that he has an equal chance to win the top prizes, then you have a contest.

If you ask the average salesman what he'd like for a prize in a sales contest, he would likely say money. Don't let that cause you to decide to have cash prizes. Time after time it has been proven that salesmen pitch in better and more sales result when the prizes are something which the men want very much but are not likely to be able to afford. Give them something which they can brag about after they get it and they'll want to win it so they can do that bragging.

After you have decided what the prizes will be, go out and buy them. Bring them to your salesroom and put them on display. Let the men *see* what can be their's when they win. Let them spend a month while the contest lasts wishing that their favorite was in their own home. Or on their wrist, as in the case of a watch. You're going to buy them anyway, so get them in advance and let them earn their way.

After you have planned your con-

(*Please turn to page* 158)



Baffling for Flues and Fireboxes

Second Article on Baffles that Improve Combustion and Reduce stack Losses

by
J. W. Schulz

Note: The first article in this series of two articles on baffling for flues and fireboxes appeared, along with eight illusrations, in the October, 1951 issue of FUELOL & OIL HEAT. *The magazine and J. W. Schulz, the author of these articles, welcome detailed reports and diagrams from dealers and service men, which deal with baffles and the amount of fuel they save. Future discussions of baffles are planned, for few subjects are as dear to the hearts of the dyed-in-the-wool lovers of the technicalities behind the best results in the field of oilheating.*

IF YOU ARE NEW at baffling furnaces and boilers, do your try-out work on jobs that run stack temperatures of 700° and higher; the higher the stack temperature to begin with, the more fuel you can save by reducing it to, say, 400° or 450°.

Don't aspire to install baffles, then, unless you have a stack thermometer and experience at using it.

Don't aspire to install baffles, then, either. Make certain beforehand that, on the job you plan to baffle, you can obtain plenty of smokepipe draft. With the smokepipe draft regulator blocked in its maximum-draft position (block shut the popular swinging-disc type draft regulator and read the smokepipe draft with the burner running), on a small job fired at lower than 1.0 gph you should get at least .07" smokepipe draft. On larger jobs fired from 1.35 gph to 3.5 gph, you should get from .10" to .13" smokepipe draft.

Often you have to clean chimneys and replace smokepipes which are old and full of air leaks, in preparing to install baffles. You may have to fill with sand a pocket at the bottom of the chimney, to end air leaks there and increase the draft. You may have to eliminate air leaks around a chimney-base clean-out door. By actual on-the-job experience, in nine cases out of ten you can increase insufficient chimney draft by 30% to 50% by taking steps like these.

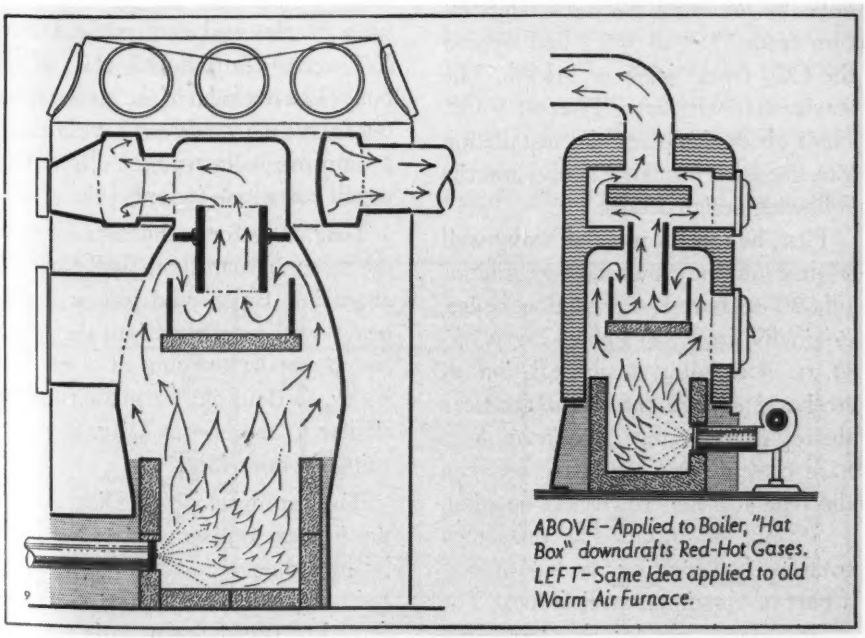
All this beforehand worry about sufficient draft relates to this principle, on which the success of your baffling depends: After the job's been equipped with baffles, the over-fire draft must be negative, not positive. This in spite of the fact that the baffles you install will restrain the flow of hot gases through the furnace or boiler or, to put it accurately and technically, will increase the draft-drop through the furnace or boiler.

Worry about getting sufficient draft, then, before you plan to baffle a job! You need a good draft gage and the know-how to put it to excellent use.

Use testing Instruments

Next, you need a CO_2 tester. So that the furnace or boiler flues will not pack with soot four months after you baffle the job, the combustion should be especially clean and complete. After you've finished your work, you should be able to tune for 12% CO_2, certainly for higher than 10% CO_2, without getting a trace of chimney smoke. To make certain of the flues remaining clean, you may then want to set for 1% or 2% lower CO_2 than your tests show gives no chimney smoke.

This concern over high CO_2 and clean burning may cause you to renovate the old fireboxes on some jobs you baffle, and to build outstanding new fireboxes on other jobs. It will cause you to worry about every detail related to obtaining high CO_2 and clean burning. You may have to fit the burner with the best, most modern, air-handling parts you can obtain for it, seal air leaks and gas leaks in the furnace or boiler, and try out three or four nozzles in a pressure burner before you find the nozzle that gives precisely the spray angle, spray pattern, and gph rate which correspond to most efficient combustion and highest CO_2 with absolutely clean burning. In these respects, experts find smoke-testing instruments invaluable for eliminating opinion from that important item of "absolutely clean burning" and substituting instrument numbers for it.



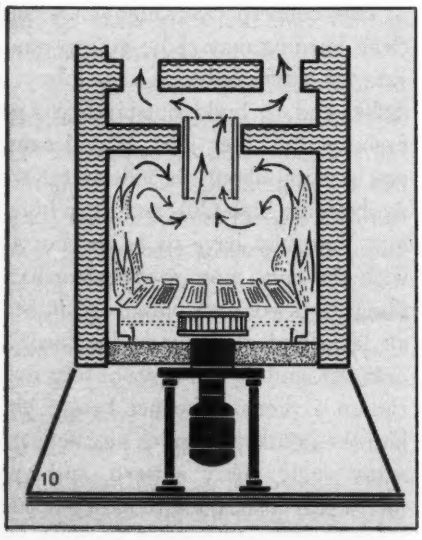
ABOVE – Applied to Boiler, "Hat Box" downdrafts Red-Hot Gases. LEFT – Same idea applied to old Warm Air Furnace.

Diag. 9. *Using this Hat Box arrangement in the combustion space of a furnace (left) or boiler (right), you make certain to support securely the heavy-wall steel pipe inserted in the center, circular opening of the crownsheet. Seal the space around this pipe with furnace cement or refractory cement, to prevent short-circuiting of the red-hot gases.*

After oilburners are modernized and new fireboxes and baffles are installed, gph rates should be much lower than those needed before these improvements are made. Bear that in mind when renovating old fireboxes (generally you reduce their size considerably) and designing new fireboxes for jobs you will baffle, and when trying out nozzles on completed jobs. For many heating plants, personally I prefer to have the firing rates so low that the burners run steadily for at least two or three hours when, on coldest mornings, clock thermostats are set for 15° higher house temperatures.

Clock thermostats force their way into this fuel-saving picture by their own merits: (1) They save oil by reducing the house temperatures at night; (2) They permit using a lower, more economical firing rate, because by setting for a high house temperature early in the morning they eliminate chances of complaints about slow pick-up of heat caused by the owner's getting up, setting up the heat, and then shivering and waiting impatiently for a quick flash of heat throughout the house; (3) They give a long, therefore efficient, firing period each morning, and fueloil "mileage" comparable to driving your car on a long trip at an even, economical speed, instead of using the car for the short-run, start-and-stop driving that wastes gasoline; (4) The long "on" period given by the clock each morning causes the burner to heat the firebox and the boiler or furnace to the high temperatures that burn up soot particles deposited in the flues and on the direct heating surfaces by the ordinary short "on" periods, which on many jobs must occur all during the day for the sake of smoothest-possible heating.

All this amounts to giving you powerful incentive, based on the above four technicalities, to make certain your baffled installations are equipped with clock thermostats.



Diag. 10. *Don't use this idea in a hard-fired boiler or furnace! Use it where the combustion space is not over-crowded with fire to start out, but where ineffective secondary heating surfaces are responsible for high stack temperatures.*

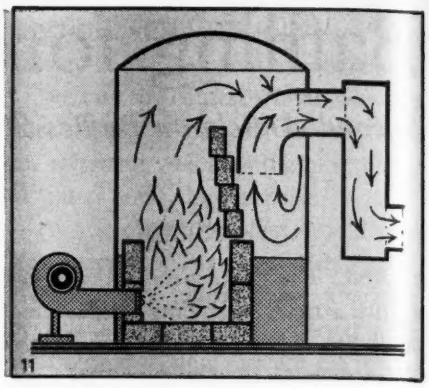
"The Hat Box" Baffle

Diag. 9 shows a combustion-chamber baffling scheme which a few years ago acquired the name, "The Hat Box," because of the appearance of the two lower parts of the arrangement. At the left-hand side of Diag. 9 is an old gravity-circulation warm-air furnace fitted with such baffling. Here, the heavy-wall 8" pipe that was installed high in the furnace's combustion space had to be fitted with a welded-on oversize washer, so that the red-hot gases would flow upwards through this 8" pipe, not pass around it.

Installed in the old cast-iron boiler at the right-hand side of Diag. 9, the Hat-Box reduced the oil consumption 36% by lowering the stack temperature from 875° to 560°, and upping the CO_2 from 7¼% to 11½%. The service man who wrote FUELOIL & OIL HEAT about this particular installation gave those performance figures and the following design details.

First, he fitted a piece of heavy-wall 6" pipe into the crownsheet opening of this 20" diameter, five-section boiler, originally fired 1.35 gph to carry 260 sq. ft. of standing steam radiation. A steel rod slipped through holes near the top of the 6" pipe holds it up. Furnace cement seals the space between the pipe and the crownsheet opening.

Second, he installed a refractory over-fire baffle, using on top of this a part of a stainless steel firebox. The stainless steel cylinder, thus placed on top of the over-fire baffle, is 10" high. Between the top of it and the crownsheet is a 4" space. The 6" pipe extends 4½" downward into the interior of the stainless steel cylinder.



Diag. 11. *Here's tremendously effective downdrafting! By making the firebox back wall higher and the opening into the elbow lower, you increase the effect. But, as with all baffling, you must not baffle to the degree of not being able to maintain a suitable negative draft over the fire.*

Checking four different nozzles for combustion excellence and speed of heating the radiators following a cold start, he wound up using 140 lbs. atomizing pressure on a 1.0 gph nozzle. Why he used the unusually high pressure, instead of the 90 or 100 lbs. preferred by most burner experts, he does not explain.

Additional details: Although the firebox was not touched in this case, the service man and his helper spent a whole day installing the baffling, and then the service man alone spent six hours of the next day experimenting with nozzles and tuning the burner. We agree heartily with this: If this boiler had not been in the service man's own home, he would not have bothered to improve it. Instead, he'd have tried to sell a new one to replace it.

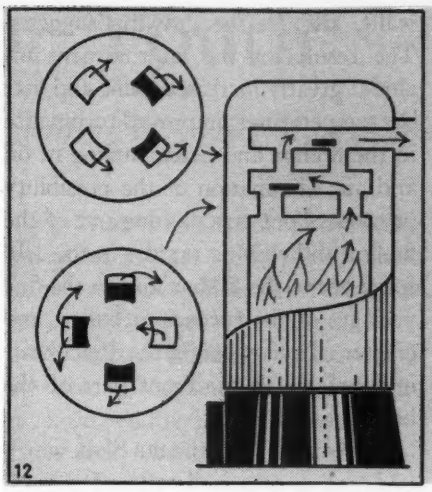
Diag. 10 is for enthusiasts for vertical rotary burners, both wall flame and atomizing types, and shows a steel heavy-wall pipe fitted into the center, round uptake opening of a cast-iron boiler. Certain old warm-air furnaces, similar to the one in Diag. 9, permit using the same idea.

The arrangement in Diag. 10 improves heat transmission to the boiler by providing a downdraft action, the red-hot products of combustion being forced to travel downwards for some distance in order to escape from the combustion space. Also, this arrangement improves combustion by (1) increasing the overall temperature in the

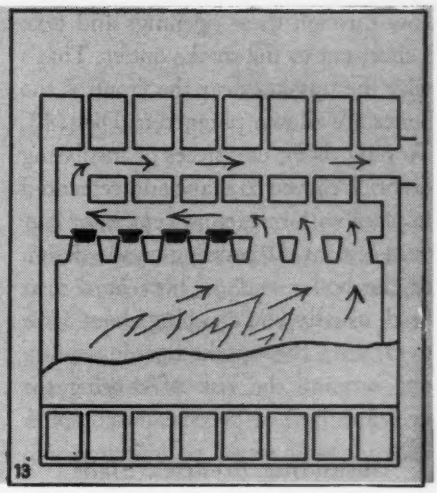
combustion space, (2) forcing the products of combustion to travel through the hot pipe before leaving the combustion space, and (3) giving an effect which one wall flame burner dealer terms "recirculation of the flame"; some of the hot gases about to leave the combustion space are drawn downwards toward the blower, then sent spinning outwards in a way that causes a layer of hot gases to travel outwards from the blower, over the cool air and atomized oil traveling outwards from the blower, with a resultant oil-preheating and air-preheating that definitely improves combustion.

Obviously, if the downdraft tube in Diag. 10 extends down too far, the oil distributing device and blower wheel of the burner will be overheated and ruined. This applies also to trying to use the idea in a hard-fired boiler or furnace. On a lightly-fired installation, little good comes of installing a tube that extends down only a few inches. The distance between the blower and the crownsheet also is a factor. Cut-and-try methods plus check-backs made over a period of months, are necessary for arriving at proper lengths for the downdraft tubes.

Heavy steel rods run through holes drilled at the tops of the tubes can support downdraft tubes of the type shown in Diag. 10. When you install any over-fire arrangement, make doubly certain there's no chance of its deteriorating and falling down! You wouldn't, for example, want a refractory over-fire baffle to drop and put a tight-closed lid on the firebox of a boiler that is fired with a gun burner!



Diag. 12. *Steel plates held in place by nuts and bolts are used here as baffles. They zig-zag the hot gases more than the boiler did originally. For their low cost, they save sufficient oil.*



Diag. 13. *The front of this boiler is at the left. With this type boiler, block as many of the front crownsheet uptakes as possible without causing the over-fire draft to go zero or positive.*

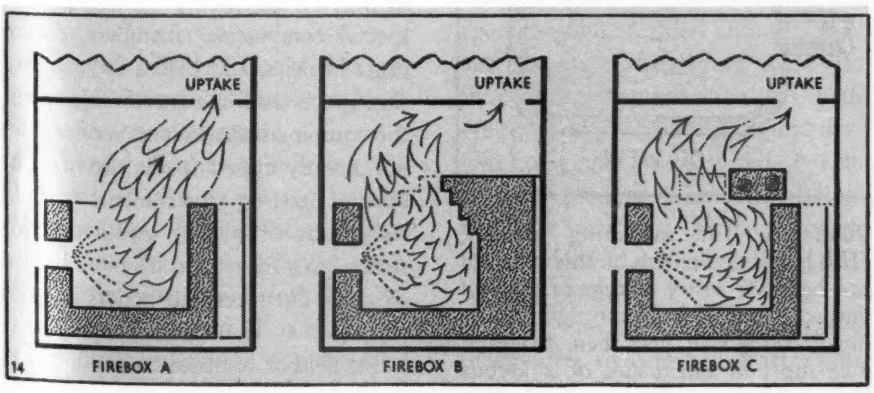
A Kankakee, Illinois sent FUELOIL & OIL HEAT the Diag. 11 baffling idea, last year, outlining that it reduces the stack temperature so much that often he has to remove the stack control panel from the smokepipe and put it on the front of the furnace. Also, often he finds it's best to insulate the inside of a firing door, because otherwise it may be damaged by the extreme heat from the flame.

The instructions regarding Diag. 11 are: Build a square firebox of insulating firebrick, keeping it as far front in the furnace as possible. Make the side walls 16" high. Make the back wall of the firebox so high that it extends 8" above the bottom of the stainless steel downdraft arrangement you install. This back wall of the firebox extends across the main drum of the furnace in a straight line, above the regular firebox, so that it divides the drum into about one-third behind the wall and two-thirds in front of the wall. It contacts the drum on each side, so that the products of combustion have to go over the top of the back wall. They can't short-circuit and travel around the ends of the back wall. Corbelling the back wall, that is stepping its bricks forward, provides the space needed for the elbow behind it.

Use a stainless steel elbow the size of the outlet collar of the main drum. Often it's best to add a piece of stainless steel pipe to lower the opening about 3".

Pieces of boiler plate cut to size, not split brick, work out best for baffling the ordinary round cast-iron boiler shown in Diag. 12. Plan to bolt the pieces in place, once your combustion testing instruments have led you to the proper locations for them, so that cleaning the flues will not move them about. Close different uptake openings about one-half or two-thirds to obtain maximum zig-zag flow of flue gases, instead of the almost straight-up gas flow the boiler provided originally.

Diag. 13 gives an idea of the flue gas flow of certain rectangular cast-iron boilers, made in domestic and commercial sizes, which have many crownsheet uptake openings. With the crownsheet openings near the front of such a boiler open, the hot gases from the fire can



Diag. 14. *Where unmixed streams of oil vapor and air are streaming out of the firebox and being chilled, as at the left, one way to gain higher CO_2 together with clean burning is to corbel or step-in the rear wall of the firebox, as in the center. Development of this idea led to the IFB slab, as a firebox baffle. Details of this are given in Diag. 15.*

flow through these openings and take a short-cut to the smoke outlet. That's why the uptakes near the front of the boiler are shown plugged in Diag. 13. To plug them, use pieces of insulating firebrick carved to shape and cemented in place with refractory cement or furnace cement. Depending on the design of the boiler and on how hard it is fired, usually you can plug about 30% to 60% of the uptake openings without running the risk of causing the over-fire draft to become zero or plus.

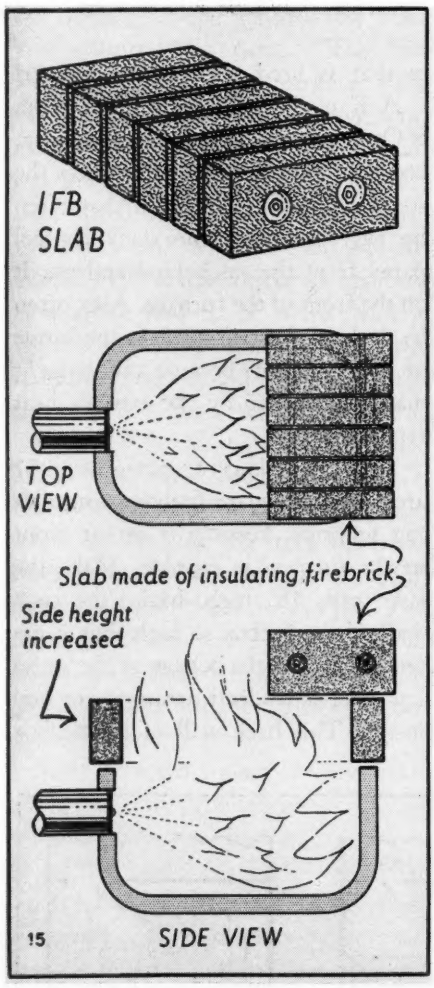
Insulating firebrick Slabs

Diags. 14 and 15 show the development of the IFB Slab (insulating firebrick slab) for baffling the combustion space of a boiler or furnace, which first was described several years ago in FUELOIL & OIL HEAT, and which has since become exceedingly popular and profitable to certain equipment dealers.

In Diag. 14, firebox "A" permits streamlined gases to flow directly from the firebox to the uptake in the crownsheet of the furnace or boiler. Especially if the burner lacks effective air-handling parts in its gun tube and the flame therefore lacks turbulence, the flame tips escaping rapidly from firebox "A" are likely to be made up of streaks of oil vapor and streaks of air which have not been engaged in the combustion process. Streaming out of the firebox may be oil flames which are still burning, surrounded by air streams not helping the combustion process. Or a blast of air blowing through the center of the flame may stream out of firebox "A," not mixed with and not helping burn the flame tips that surround it and escape with it. The troubles of firebox "A" may include (1) poor mixing of oil and air in the firebox, (2) rapid escape from the firebox of air or oxygen which should have helped with combustion, but which did not help, and (3) low firebox temperature.

Increasing the height of the back wall and corbelling it, as in firebox "B," is one way to end the three troubles listed above. This also gains additional flame travel for the products of combustion before they reach the crownsheet uptake. A few bricks are added to the back parts of the side walls, also, as the drawing suggests. The results of the improvement include: greatly increased flame and firebox temperatures; improved turbulence in the firebox and better mixing of oil and air; elimination of the possibility of crude flame tips dashing out of the firebox and chilling rapidly in the cold space above the firebox and in the flue passages of the furnace or boiler; and greater effectiveness for the direct heating surfaces in the front part of the boiler or furnace.

Firebox "C" has the IFB Slab, which is shown in greater detail in Diag. 15. Devised to permit easy adding of the corbel benefits to an existing firebox, this consists of insulating firebrick bolted and cemented together. For long life, 3/8" steel rods threaded at each end can be used to bolt together the insulating firebrick. Some provision must be made for the difference in heat expansion between the steel rods and the firebrick. One dealer reports he is successful in mixing a bit of asbestos cement, for "give," with the refractory cement to hold the bricks together.



Diag. 15. *The insulating firebrick (IFB) slab at the top of this diagram can be made easily, thanks to the fact that you can drill holes through insulating firebrick and bolt them together. The top and side views of a firebox show how to get better results speedily and at low expense from a low-sidewall, cheap firebox installed by one of your competitors. This trick method for providing up to 9" of front or rear arch is becoming very popular.*

Bolting Firebrick together

To bolt the firebrick together, drill holes in them using a wood drill or metal drill, which of course you expect to ruin quickly because of the abrasiveness of the brick. Provide in the end brick pockets large enough for the washers and nuts used there, and with the slab completed cement pieces of refractory cement in the pockets as corks to protect the nuts from heat as much as is feasible.

The lower part of Diag. 15 shows how, finding a low-sidewall firebox on a job that gives poor combustion, you can improve the combustion speedily and at relatively low cost by using insulating firebrick to increase the height of the side walls by 4½", and forming a highly effective rear-wall corbel by installing an IFB Slab on the firebox. This won't produce for you and the owner all of the well-known advantages of installing the best firebox that can be built of insulating firebrick, but it will gain greater fuel economy than comes of using an ordinary heavy-brick firebox.

An expert well versed in the intricacies of combustion and boiler and furnace design can devise additional fuel-saving arrangements which involve special combustion chambers, downdraft benefits, and baffles for combustion spaces and flue travels. However, the equipment dealer and service man not already expert in the use of combustion testing instruments should steer clear of baffling endeavors, for such a man may wind up more baffled than the furnaces and boilers he tries to improve. There's no denying that in the field of combustion and heat absorption, outstanding results and truly minimum fueloil consumption can be attained only as a result of an exceptionally complete understanding of the principles involved.

Oilheating for Youth

It's Time to seriously study Recruiting of young Men to the Industry

by
Robert Gray

(Edit. note—This is primarily a story of cooperation between a group of oil and oilheating men with the New York Board of Education. The result has been the introduction of oilheating in a substantial way into three of the City's vocational high schools. It is hoped that this outline will stimulate groups in other cities to undertake similar projects.)

IN THE "OILHEATING TRENDS" department of this issue is a rather startling disclosure. Among the large group of dealers who so splendidly cooperate by answering questions on current problems each month, we find that 26% of them are holding back on making burner sales because they don't have enough good installation men to handle the business they could get. To take a burner order and then stall off the installation date through too many weeks would give the dealer a bad reputation in his community, so he soft pedals on orders. What a situation for a dealer, or in fact for an industry!

It isn't only in the installation department that men are scarce. Take a page from the last January issue of FUELOIL & OIL HEAT. At the close of 1950 the industry employed one burner service man to each 384 customers. Only three years earlier there had been one service man for each 302 customers. The result is obvious. A greater share of total service work done is of an emergency nature; less of it is preventive maintenance, fuel-saving adjustments and refinements.

Oilburner salesmen have been scarce for years. It isn't necessarily because they earn less in our industry, but rather that they have to know something about oilheating before they can sell it . . . not enough men have been trained in this direction. Other industries, perhaps older industries, have been grabbing them off young and training them.

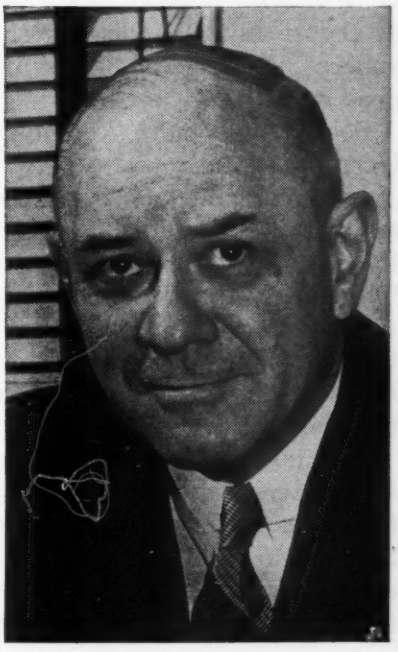
In working with a group in the New York Board of Education, it has been a great surprise to discover how many industries go after young folks in their formative years. The possibilities in such programs are impressive.

Specialized oilheating education is available throughout the country in about three dozen private trade schools. Then there are about 20 vocational schools in the public educational systems that have oilheating courses. Without doubt the training in the private trade schools is more advanced, since the students are mature men who have either had some oilburning experience and want to improve it, or they have come in contact with oilheating while in other work. We can speak highly of these private schools and recognize their great value. But they can't serve our full needs in the longer range building of the industry. Our personnel problem today is the result of phenomenal industry growth since the war and the fact that we have had no plan for recruiting on a national scale.

There are at least 50 industries in the country that are going after teenagers in the secondary schools to convince them individually that they should start now to build a life career in that particular industry. They do this selling job on first or second year high school students, with the hope that the boy or girl will start vocational training for that industry. It's not that they expect them to come out of a secondary school as finished artisans, but they will know enough about the industry to feel that they're a part of it and they'll be eager to apply their basic training to further develop the necessary skills in private employment. Anyway, they've gotten their feet wet and they're in up to here.

It's high time that Oilheating as an industry entered that competition to attract young minds. These other industries going after the kids do it in several ways. They present their cases, sell their industries to the vocational guidance directors who are found in just about every major school system and in the individual high schools. They didn't have such persons back in our day but the woods are full of them

PHOTOGRAPHS — *Mrs. Betty Hawley Donnelly, executive secretary, Advisory Board for Vocational and Extension Education, New York Schools, and L. T. White, Cities Service, and chairman Educational Committee, Oil Industry Information Committee. These are the individuals who did most to bring about the oil-heating courses in the city's vocational schools.*



YOUR FUTURE IN

OILHEATING

Soon you're going to start thinking about a job—but not just any job. You want a skilled job. So train yourself for that skilled job. If you've learned a skill in school, you can earn more money on your first job than the boy who's fooled around and couldn't make up his mind.

Only 1 out of 7 boys looking for his first job has been trained. Be one of these boys.

With a skill, you will approach an employer with more confidence in yourself, knowing you've got something to offer.

With a skill, promotions will come faster, and you can enjoy the better things in life while you're still young.

The skilled man has security. With a skill, you can get a job at almost any time whether the general business conditions are good or bad.

So—to earn more, you must learn more.

In America today there are many types of skills. Some of them are becoming obsolete as living methods change. You want to train yourself for an industry that is young and growing, an industry that insures a good future for you.

Nothing is closer to the personal interest of every individual than his living conditions at home. Year after year he spends a larger share of his income for things to make his home life more convenient, more comfortable.

Automatic oilheating brings better living to every city and town in the United States. More than five million American families now enjoy oilheat and a million of these are in greater New York. Yet only a fifth of all homes now have automatic heating in any form . . . many millions more expect to install it.

Men who train themselves to know oilheating have unlimited job opportunities. In greater New York alone 1000 new jobs open up every year to take care of the industry's growth.

The number of men needed in the oilheating industry will continue to grow. Nearly a million new families buy oilheat each year. They buy it to get the convenience, the uniform healthful temperatures, the automatic comfort and safety that oilheat brings. This dynamic industry calls for good men, trained men.

As a trained oilheating man you will make use of a variety of skills. You will have a working knowledge of electricity, sheet metal, pipe fitting, hydraulics, electronics, combustion.

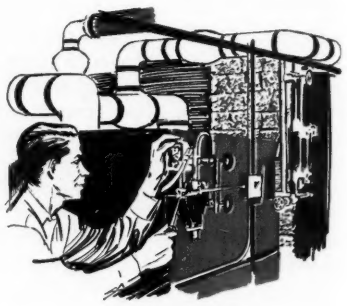
You will use these talents in many ways, serving many people. You will tackle new problems every day.

Now let's get down to cases and look at the jobs where you can use your oilheat training.

Installation man

As a member of an installation crew, he places the oilburner in the heating plant, connects the piping, wiring and automatic controls. The burner is started and tuned up with the use of combustion instruments for the most efficient operation.

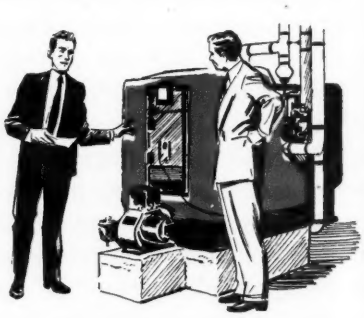
Often the job includes putting in a complete new boiler or furnace, as well as equipment for domestic hot water supply. The installation man uses all of his trained skills on this work.



Oilburner Service man

This man is the industry's doctor. He keeps burners running in good shape. The only fully automatic device in a home that operates over long periods of years, an oilburner needs attention from time to time. This work may be on emergency calls if a burner has stopped operating, or it may be on periodic inspections and tune-ups to prevent trouble.

The service man uses all of his skills. He must be able to diagnose trouble and correct it to the customer's satisfaction. Personality is important, for he represents the dealer to the public.

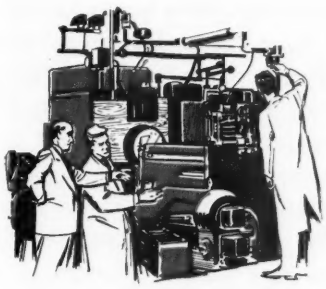


Sales engineer

To sell oilheating, a man must be able to inspire people with his knowledge of how it works, and what it will do for a family in the home.

He must be able to survey the needs of a particular building and its occupants and recommend the best equipment for the job.

He figures the cost and shows the prospects how spending this money will bring them better living conditions. His training as an oilheating man helps to insure success in selling. Sales engineers are well paid for results.



Combustion engineer

Large oilheating dealers and oil companies often employ these specialists. They are consultants on large trouble jobs. They give advanced training to service and sales departments. They design and estimate unusual jobs for special applications. They know the chemistry of fuels and combustion and make recommendations at the higher levels of the industry. They may be development engineers in oilburner factories. These are professional men, and they build substantial reputations in the industry.

Sales manager

Larger oilheating dealers employ such men. They are usually promoted from the sales force. They train and supervise the men who are out getting the business. In addition to a full understanding of oilheating, they must also know how to get along with people and stimulate them to successful effort.

Factory representative

All manufacturers of oilburning equipment use travelling field men who must understand oilheating. Larger factories employ 50 to 100 of these men.

Their job is to get new dealers and help the old ones. They do educational work, showing the dealers how to better organize their efforts, how to use new merchandising ideas, how to improve their profits. They help supervise the dealers' training activities and in some instances furnish technical advice. These are management jobs and well paid.

Oilheating dealer

Few businesses offer you as good an opportunity to be your own boss. When you have gained skill and knoweldge of oilheating through experience, you can start your own business with modest capital.

In this business the customers like to deal with local people who can best understand their needs. As a result, most oilheating is sold through small neighborhood dealers.

The oilheating dealer has an interesting combination of skills. He is both a technician and a merchant. Each day brings new opportunities for services to his local community—well paid services.

Many oilheating dealers go into the fuel oil business. Customers like to place their entire oilheating needs in the hands of one organization. Each oilburner sold brings the dealer a customer for fuel oil through many years ahead.

Looking Ahead

Oilheating is a progressive industry. Each year new uses, new applications, for oilburning are developed. Many more will be found.

While heating is the principal use in the number of burner installations, the industry has designed and sold many burners for food processing, crop drying, tobacco curing, generating electricity, heating trains and aircraft, and a great variety of industrial needs.

The residential burners now being installed are 10 to 20% more efficient than those of 15 years ago.

Although the industry started back in 1920, it is interesting that two-thirds of all burners now in use have been sold since the war ended in 1945.

Oilheating is a fast growing, young man's industry.

.....

DR. WILLIAM JANSEN
Superintendent of Schools
Board of Education, City of New York

DR. C. FREDERICK PERTSCH
Associate Superintendent in charge
Vocational High Schools

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now. These fine folks discuss careers with the boys and girls at ages of 13-16.

Then the industries prepare attractive literature painting the glories of the printing trade, the graphic arts field, an automotive career, the fashion industry, jewelry, office machinery or dozens of others . . . in some schools oilheating, but far too few.

Some of these industries in their recruiting will work on adult groups to influence their children . . . for example, PTA. Sometimes they put on a nice luncheon meeting for all of the vocational guidance directors in a particular school system. When you get into recruiting, you learn that it's almost as much of a selling job as merchandising a product.

It was last spring that L. T. White of Cities Service, and chairman of the Educational Committee for the Oil Industry Information Committee, looked about to see how the oil industry could interest the New York public schools in helping us with more vocational training. He first had a talk with Mrs. Betty Hawley Donnelly, executive secretary to the Advisory Board for Vocational and Extension Education . . . with all that long title she's actually the spark plug in the program. Mrs. Donnelly made it clear that the Board would be happy to help if the industry had a real need to be met.

Then White talked with a lot of oil men around town and on the way he reached the oilheating crowd who very eagerly told him that they needed lots of men, that they're always scarce. So the program for this year has been built around oilheating. Looking ahead through the years the hope is to get one complete vocational school devoted to oil industry training, which would include oilheating. The hope is not too visionary; two dozen industries now have complete schools operating under the New York Board of Education.

A committee was set up to work within the machinery of the Board of Education, called the "Oil Industries Educational Commission." Its 27 members are listed on another page.

Although a lot of spade work had been done in advance by White and the New York Oil Heating Assn., the first actual meeting of the Commission was June 20. From that point things moved fast. Sub-committees were chosen to undertake various parts of the work to be done, all with the goal of having a number of classes in operation for this Fall term of school . . . opening date September 10.

A committee on Curricula and Guidance is headed by A. J. (Tony) Sbare with George Knittel, Joe Ross and Murray Lieblich as members. This group worked with school instructors to lay out the detail of the course of training.

Philip Schepp, secretary of the New York Oil Heating Assn., was made executive secretary of the Commission and he is also chairman of the Equipment Committee. Serving with him are Frank Howard and Jack Weigert and this committee's job is to ask equipment manufacturers to give or lend some of their equipment to be used in training the boys. The response to this has been phenomenal . . . some 80 manufacturers have supplied equipment, always in duplicate to get the two principal schools started.

Then there was a committee on finance, headed by W. J. Bennett and including John Albright, W. S. Gagel and H. N. Hurston. The company affiliations of all of these various committeemen are shown in the table that lists the Commission. Some money would be needed to help get the best instructors for the courses, to pay for booklets and other items. The group wanted excellent teachers for the courses; they wanted industry men, and the school board can't pay them enough at the start, so the Commission will pay them something extra for making special studies in summer months or weekends. From 13 oil companies the committee put together about $5,500 for the first year.

The fourth subcommittee was on Recruitment. This is headed by Robert Gray and includes Nathalie Ronis, H. J. Drucquer, W. E. Dobie, F. B. Lipsett, Eric Bergman and Fred Grinnell. This committee's job is to help sell the industry to the kids. Its first undertaking was to prepare and publish the

(*Please turn to page 157*)

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Hot Water for Trailer Court

IT'S DIFFICULT to figure the size hot water tank or tankless heater needed to prevent running out of hot water in any particular home, apartment or commercial establishment.

Factors related to the rate of flow of hot water from different faucets and shower heads introduce problems which are hard to solve. Even the water pressure and size of the hot water lines count. One washing machine or dishwasher may use five times as much hot water as another, during an eight hour period of peak water heating load you are trying to evaluate, because of differences in its hot water requirements and the manner in which it is put to use.

Knowing that this is sheer gambling, we figure that each occupant of a house uses from 10 to 15 gallons of hot water per day. Actually one occupant may account for one-third of this or three times this. That's why, with the tank-type indirect heaters connected to them sized similarly, a 40-gallon hot water tank serves beautifully for six occupants of one house; while the six occupants of the identical house next-door run out of hot water though they have a 100-gallon tank. That's why a certain 45-family apartment house gets by with a 500-gallon hot water tank, although before it was built a good heating engineer swore there'd be trouble with less than 30-gallons of stored hot water per apartment.

Because of all this, problems regarding water heating loads are best solved with the help of all the good judgment, experience, and luck you can assemble. Of course, to put in equipment 200% of the proper size will ward off complaints about cold water coming from hot water faucets. Following this course only wastes your customer's money by giving him needlessly oversize equipment and perhaps oversize fuel bills. Also, this course may lead to a high bid that loses a contractor the job he'd like to sell. On the other hand, putting in equipment of 80% the needed size causes trouble.

Case histories are invaluable. Coming from other contractors, case histories tell you the size of the hot water equipment that worked out satisfactorily for another contractor, and permit you to judge what size equipment may work well for you on a similar job. That's why the following facts from Charles R. Green, Denver, Colorado, were welcomed when they turned up in the mail.

This contractor referred to p. 146 of the March issue of FUELOIL & OIL HEAT, where a question and answer on water heating appeared, and said that on a job like this he has used a circulating pump to excellent advantage. Here are the highlights of his letter:

"Attached is a diagram of a job we installed two years ago. It provides hot water for the two washrooms of a trailer court which takes in from 75 to 100 trailers.

"With the load of clothes washing, four showers running, etc., never has this equipment failed to provide enough hot water. And you have something there, when you get no complaints at all from such a bunch of hot water users! I have never read a description of a water heating set-up of the type we installed on this job.

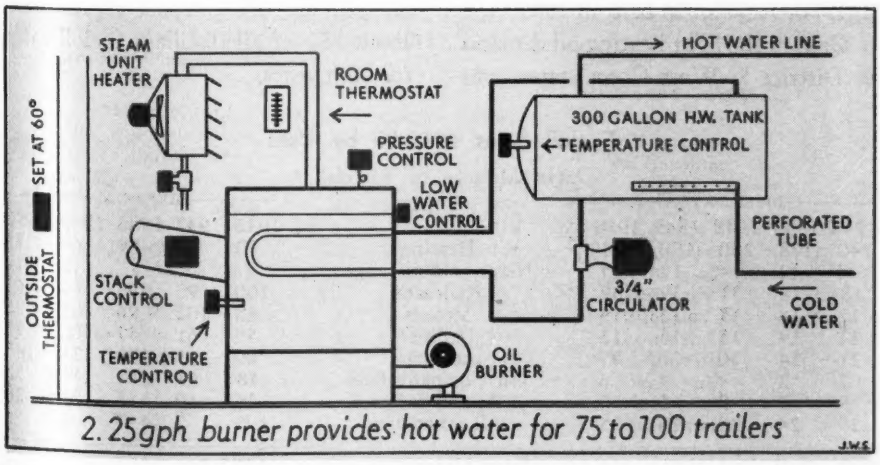
"Boiler is rated 800 sq. ft. steam E.D.R.; immersed coil rated 240 gph hot water, 100° rise; Delco oilburner fires 2.25 gph; two steam unit heaters, each of 50,000 Btu per hour output.

"When the outside temperature is above 60°, the Aquastat keeps the boiler at 180° to 190°. The Aquastat on the hot water tank turns the ¾" B&G circulator on and off, keeping the tank at 140° to 150°. The outside thermostat snaps on below 60°. This control is wired in parallel with the boiler Aquastat, and when it's 'on' the boiler maintains steam pressure of two to five pounds. When the temperature of the two washrooms drops, a room thermostat turns on the motors of the two unit heaters. But immersion Aquastats below the unit heaters (diagram shows one) are used to keep their motors idle when there's no steam. With the outside temperature below 60° and steam pressure therefore maintained by the boiler, negligible steam is used by the unit heaters while their motors are idle.

"Due to the poor oil delivered last winter, we switched this burner and some of our others to constant ignition, instead of intermittent. Before that, we would get flame failure and then a bang when the oil started burning again. All jobs have return lines."

Charles Green rates congratulations for the excellent installation he engineered, and many thanks for his thoroughly good write-up on it.

Seemingly Mr. Green has brought out this point. The hot water requirements of 75 to 100 trailers can be provided amply by an excellent boiler fired at 2.25 gph, a 300-gallon hot water tank, and a 240 gph indirect water heater through which water is speeded by a circulator when the tank tends to chill. There's a set of notes that many an equipment dealer should keep on hand!



Use of the ¾" circulator, *turned on and off by the tank temperature control, seems to be the secret of obtaining vast amounts of hot water from this 300-gallon hot water tank. This job has features of stored hot water, and features of heating water instantaneously with the circulator running.*

Range Oil Sales By Grades and States U. S. Bureau of Mines

(Thousands of 42-gallon barrels)

NEW ENGLAND STATES

	Kero-	No.1	1950	1949
Massachusetts	12687	818	13505	13486
Connecticut	4902	336	5238	4361
Rhode Island	2897	161	3058	2811
Maine	2950	143	3093	2280
N.Hampshire	1536	100	1636	1299
Vermont	809	26	835	803
	25781	1584	27365	25040

MIDDLE ATLANTIC STATES

	Kero- sene	No.1 Fuel	1950 Total	1949 Total
New York	9709	677	10386	9590
New Jersey	4874	552	5426	4701
Pennsylvania	2521	317	2838	2407
Maryland	1310	26	1336	1234
Delaware	625	2	627	629
Dist. of Col.	251	3	254	325
	19290	1577	20867	18886

MIDWESTERN STATES

	Kero- sene	No.1 Fuel	1950 Total	1949 Total
Illinois	3182	3002	6184	5002
Michigan	2387	1592	3979	2267
Wisconsin	1172	1354	2526	1744
Indiana	1905	611	2516	1709
Minnesota	1385	1069	2454	1435
Missouri	1456	852	2308	1469
Iowa	1342	846	2188	1555
Ohio	1554	372	1926	1251
Nebraska	504	219	723	532
S. Dakota	498	143	641	245
Kansas	412	180	592	496
N. Dakota	485	49	534	212
	16282	10289	26571	17917

WESTERN STATES

	Kero- sene	No.1 Fuel	1950 Total	1949 Total
Colorado	149	110	259	187
Montana	109	111	220	169
New Mexico	162	13	175	146
California	116	..	116	306
Idaho	25	55	80	67
Wyoming	66	12	78	64
Utah	14	28	42	40
Oregon	12	..	12	32
Washington	7	..	7	27
Arizona	6	..	6	10
Nevada	1	..	1	2
	667	329	996	1050

SOUTHERN STATES

	Kero- sene	No.1 Fuel	1950 Total	1949 Total
N. Carolina	3769	103	3872	3141
Texas	1973	91	2064	1964
S. Carolina	1957	65	2022	1244
Georgia	1702	95	1797	1190
Virginia	1615	108	1723	1628
Florida	1526	75	1601	1460
Tennessee	1309	61	1370	1188
Arkansas	854	110	964	892
Oklahoma	815	108	923	814
Louisiana	615	86	701	659
Alabama	550	30	580	530
Kentucky	489	69	558	358
Mississippi	441	12	453	369
W. Virginia	234	1	235	193
	17849	1014	18863	15630

TOTAL UNITED STATES

	Kero- sene	No.1 Fuel	1950 Total	1949 Total
U. S. Total	79869	14793	94662	78523

1950 fueloil Consumption, U. S. Bureau of Mines

THE MARKET for fueloils and kerosene turned sharply upwards to new levels in 1950, according to a sales survey made by the Petroleum and Natural Gas Branch, Fuels and Explosives Div., Bureau of Mines, U. S. Dept. of Interior.

Despite fractionally higher prices, important gains were registered in heating oil sales, mainly because of colder weather, adequate supplies and a relatively greater percentage gain in burner installations in 1950 compared with 1949. Sales of 220,947,000 bbls. of light heating oils (grades 1 to 4) in 1950 amounted to a 16% increase over the 1949 total of 190,387,000 bbls. At the same time, deliveries of Nos. 5 and 6 fueloils rose from 60,414,000 bbls. in 1949 to 72,716,000 bbls. last year.

Almost 56% of all distillate fueloils sold in 1950 were used for space heating, while 58% of the national total in 1949 were used for this purpose. The heavy grades represented 12% of all fueloil in 1949 and 13% in 1950.

Geographically, sales of heating oils in District 1, Eastern Seaboard states, of 130,570,000 bbls. in 1950 topped 1949 deliveries of 112,062,000 bbls. by 17%. Quantities in both years equalled 59% of national totals.

In District 2, Midwestern states, which accounts for about 28% of distillate heating oil sales, an increase of 20% was registered, 63,687,000 bbls. in 1950, 52,903,000 bbls. in 1949.

Gain in the light heating oil demand in District 5, West Coast states, was less, pronounced because of a decline in California, where milder weather and increased natural gas use contributed to sales of 21,299,000 bbls., only 5% more than 1949 requirements of 20,347,000 bbls. District 3, Gulf Coast states, and district 4, Western states, also registered gains in 1950.

Heavy grades of heating oil sold in District 1 rose from 39,003,000 bbls. in 1949 to 46,256,000 bbls. in 1950, a gain of 19% and representing 64% of all deliveries in both years. A gain of 30% was noted in District 2, also, where heavy heating oil sales advanced from 12,080,000 bbls. in 1949 to 15,710,000 bbls. last year. In District 5 dealers reported sales of 7,879,000 bbls. in 1950, up 15% from the 1949 volume of 6,841,000 bbls. and in Districts 3 and 4 gains also were registered, although the demand for heavy heating oils in these areas is small.

Demand for kerosene and No. 1 oil, which declined slightly in 1949, showed a large increase last year, with sales rising to 94,662,000 bbls., compared with 78,523,000 bbls. in 1949, a 21% gain. Kerosene delivered for range burners totalled 79,869,000 bbls. in 1950, 66,244,000 bbls. in 1949, while No. 1 sales reached 14,793,000 bbls. in 1950, up from 12,279,000 in 1949. Kerosene sold for range fuel accounted for about 65% of total sales in 1949 and 68% in 1950; No. 1 fueloil sold for this purpose represented about 4% of all distillate fueloil sales for both years.

Fueloil Sales 1946-50 by Uses

(In Millions of Barrels)

DISTILLATE					USES	RESIDUAL				
1946	1947	1948	1949	1950		1946	1947	1948	1949	1950
140	178	200	190	221	Heating	50	56	59	60	73
8	12	14	12	15	No. 1 sold as range	..	..	..	..	..
18	24	31	39	49	Railroads	100	98	90	63	61
12	14	15	13	13	Vessels	88	102	96	89	93
11	14	15	13	13	Utilities	51	61	57	80	93
21	24	30	26	37	Industrial	99	115	118	123	148
2	2	4	4	6	Oil Company Fuel	58	63	57	52*	53
9	5	9	6	7	Armed Forces	36	19	25	23	28
19	24	25	26	35	All other uses	5	7	7	4	5
240	297	343	329	396	Total United States	487	521	509	494	554
29	30	21	12	13	Exports	9	11	13	13	16
269	327	364	341	409	Grand Total	496	532	522	507	570

*Revised.

Heating Oil Sales
By Grades and States
U. S. Bureau of Mines

(Thousands of 42-gallon barrels)

1950				Total Distillate			1950		Total Residium		Grand Total	
No. 1	No. 2	No. 3	No. 4	1950	1949	NEW ENGLAND STATES 1	No. 5	No. 6	1950	1949	1950	1949
1,320	16,433	97	82	17,932	15,918	Massachusetts	1,521	6,210	7,731	7,108	25,663	23,026
957	7,442	95	151	8,645	7,581	Connecticut	2,454	2,692	5,146	4,250	13,791	11,831
156	3,010	11	11	3,188	2,886	Rhode Island	378	2,255	2,633	1,771	5,821	4,657
432	2,305	..	1	2,738	1,988	Maine	86	201	287	263	3,025	2,251
226	2,138	15	..	2,379	1,519	New Hampshire	25	226	251	201	2,630	1,720
81	746	13	7	847	834	Vermont	9	75	84	51	931	885
3,172	32,074	231	252	35,729	30,726		4,473	11,659	16,132	13,644	51,861	44,370
						MID-ATLANTIC STATES						
No. 1	No. 2	No. 3	No. 4	1950	1949	2	No. 5	No. 6	1950	1949	1950	1949
2,705	33,440	1,957	381	38,483	34,832	New York	3,092	11,546	14,638	11,921	53,121	46,753
1,679	17,768	1,409	616	21,472	19,321	New Jersey	2,476	4,856	7,332	6,920	28,804	26,241
1,910	13,591	438	45	15,984	11,889	Pennsylvania	1,630	2,294	3,924	3,376	19,908	15,265
737	6,389	20	9	7,155	6,096	Maryland	201	1,126	1,327	862	8,482	6,958
142	1,848	..	..	1,990	1,784	Dist. of Col.	123	765	888	745	2,878	2,529
145	901	..	..	1,046	884	Delaware	90	140	230	218	1,276	1,102
7,318	73,937	3,824	1,051	86,130	74,806		7,612	20,727	28,339	24,042	114,469	98,848
						MIDDLE WESTERN STATES						
No. 1	No. 2	No. 3	No. 4	1950	1949	3	No. 5	No. 6	1950	1949	1950	1949
2,233	7,548	3,414	28	13,223	10,653	Illinois	2,819	3,218	6,037	4,834	19,260	15,487
3,250	5,559	949	76	9,834	8,613	Michigan	1,282	1,298	2,580	1,896	12,414	10,509
2,980	5,196	850	56	9,082	7,581	Minnesota	447	344	791	469	9,873	8,050
1,681	3,986	998	22	6,687	5,187	Wisconsin	391	289	680	550	7,367	5,737
2,246	2,189	610	339	5,384	4,116	Ohio	466	391	857	562	6,241	4,678
1,358	2,661	631	32	4,682	3,367	Indiana	523	522	1,045	785	5,727	4,152
1,506	2,795	300	..	4,601	4,013	Iowa	332	148	480	255	5,081	4,268
840	1,961	865	102	3,768	3,494	Missouri	1,059	670	1,729	1,481	5,497	4,975
954	709	361	4	2,028	1,975	Nebraska	139	85	224	197	2,252	2,172
321	663	69	2	1,055	962	North Dakota	5	1	6	4	1,061	966
372	607	73	1	1,053	965	South Dakota	17	50	67	20	1,120	985
360	462	21	..	843	865	Kansas	462	229	691	528	1,534	1,393
18,101	34,336	9,141	662	62,240	51,791		7,942	7,245	15,187	11,581	77,427	63,372
						WESTERN STATES						
No. 1	No. 2	No. 3	No. 4	1950	1949	4	No. 5	No. 6	1950	1949	1950	1949
5,433	..	4,383	..	9,816	8,161	Washington	2,255	709	2,964	2,353	12,780	10,514
2,591	..	2,784	..	5,375	4,378	Oregon	1,313	192	1,505	1,106	6,880	5,484
2,491	..	2,622	..	5,113	6,725	California	2,246	1,033	3,279	3,279	8,392	10,004
662	235	77	8	982	970	Idaho	115	17	132	82	1,114	1,052
251	192	216	1	660	577	Montana	56	78	134	95	794	672
233	326	97	..	656	648	Colorado	43	82	125	109	781	757
223	..	318	..	541	568	Nevada	57	63	120	77	661	645
215	67	171	70	523	513	Utah	85	37	122	57	645	570
211	..	243	..	454	515	Arizona	7	4	11	26	465	541
52	177	26	2	257	241	Wyoming	27	11	38	22	295	263
37	61	4	..	102	98	New Mexico	1	2	3	2	105	100
12,399	1,058	10,941	81	24,479	23,394		6,205	2,228	8,433	7,208	32,912	30,602
						SOUTHERN STATES						
No. 1	No. 2	No. 3	No. 4	1950	1949	5	No. 5	No. 6	1950	1949	1950	1949
1,051	2,995	6	6	4,058	2,262	Virginia	157	461	618	208	4,676	2,470
330	960	711	..	2,001	1,671	N. Carolina	22	21	43	38	2,044	1,709
395	698	34	47	1,174	1,009	Texas	862	482	1,344	1,304	2,518	2,313
186	746	140	4	1,076	1,061	Florida	175	294	469	447	1,545	1,508
208	424	90	1	723	718	Georgia	214	318	532	494	1,255	1,212
151	499	15	..	665	441	Tennessee	13	170	183	177	848	618
98	475	85	..	658	628	S. Carolina	19	8	27	20	685	648
146	382	19	57	604	487	Kentucky	26	124	150	136	754	623
146	336	..	2	484	486	Alabama	82	64	146	54	630	540
95	193	29	4	321	306	Louisiana	318	271	589	502	910	808
26	150	18	1	195	190	W. Virginia	60	36	96	110	291	300
46	130	2	..	178	184	Oklahoma	128	62	190	186	368	370
48	66	4	..	118	115	Arkansas	90	141	231	258	349	373
42	67	5	..	114	112	Mississippi	5	2	7	5	121	117
2,968	8,121	1,158	122	12,369	9,670		2,171	2,454	4,625	3,939	16,994	13,609
						TOTAL UNITED STATES						
No. 1	No. 2	No. 3	No. 4	1950	1949		No. 5	No. 6	1950	1949	1950	1949
43,958	149,526	25,295	2,168	220,947	..	Total U. S. 1950	28,403	44,313	72,716	..	293,663	..
35,936	128,088	24,784	1,579	..	190,387	Total U. S. 1949	24,510	35,904	..	60,414	..	250,801

Burning Oil completely

Lightweight Firebrick for combustion Chambers in Conversions and Units

by
Ralph L. Dennis*
and
I. Maynard Nelson*

The word of these firebox experts should influence those domestic-burner dealers who now are building the simplest, cheapest fireboxes. And of particular interest to manufacturers of domestic furnaces and boilers who may have different ideas, the authors argue strongly in favor of burning the atomized oil in the presence of red-hot refractory material. The reason the authors recommend insulating firebrick for domestic combustion chambers is stated clearly in the article: They declare that this material will glow cherry red in fifteen seconds after the burner starts. Presumably this should, of course, be the result of using precisely the materials and the designs they prefer.

THE COMBUSTION CHAMBER is one of the most vital factors in a good oilburner installation. It must be made of the right material, properly sized for the nozzle firing rate, shaped correctly, and the proper height.

These elements of good construction must be adhered to if you expect to obtain the highest overall efficiency from your conversion installation or your new heating unit.

In conversion work installers frequently violate all or part of these vital elements of good chamber design. Their burners may operate, but at low efficiencies at the expense of the owner and the reputation of oil as an economical fuel. Believe it or not, we have recently received a report from an unquestionable source that on several new home installations, the chambers were made of red building brick. It is this kind of ignorance or indifference to the welfare of the owner that is giving oilburning, in many sections of the country, a black eye that everyone connected with oil or oilburning will eventually pay for.

Unfortunately, it is not only in conversion installations that gross violation of proper combustion chamber design is taking place. Many manufacturers of boiler and furnace units have recognized the great importance of proper combustion chamber design and are supplying a good chamber with their units. On the other hand, a number of manufacturers, who have taken great pains to properly engineer and design a good heating unit, have paid too little attention to the importance of correct chamber construction. By doing this they have undermined the performance that their well constructed heater should give in the field.

The wrong chamber material is often used, apparently because it is easy to fabricate, is easy to ship with the units, and possibly, a little cheaper to produce. It seems quite obvious in a number of cases that those responsible for the selection of the combustion chamber to be used have little knowledge of the great importance of the chamber and in some cases, look upon it as a sort of lining that must be put in the dry base of the boiler to prevent the metal from burning out.

In other cases, manufacturers have designed a heater for efficiency of flue travel and compactness and then as a second thought tucked a chamber into whatever space remains, regardless of adhering to proper size and shape for the firing rate involved. This just cannot be done and gotten away with unless at a tremendous expense to the customer, the dealers, the field man, or all three combined.

There is no sense in continuing to deny facts. Combustion chambers must be right. The writers know of hundreds of installations of new heating plants, potentially good efficient boilers and furnaces, the products of good manufacturers, that gave terrible results in the field at a substantial cost to the distributor, dealer, and even the manufacturer's own field men, because of only one reason — the combustion chamber was not right — and it was supplied with the heater by the manufacturer. After much costly trouble and dissatisfaction to the customer, these chambers were replaced and proper results were obtained. For some hard to understand reason, however, some reliable manufacturers have not awakened to the fact that their trouble is combustion chamber design and still are supplying a very inferior chamber to the certain detriment of their carefully designed heater.

Based on over thirty years of close association with oilburner installations, plus years of laboratory research on the subject of the importance of correct chamber design, the writers would like to point out the basic factors of good chamber design as we know them.

One of the four fundamental laws of burning oil with a pressure atomizing burner states that "the mixture of atomized oil and air burns best in the

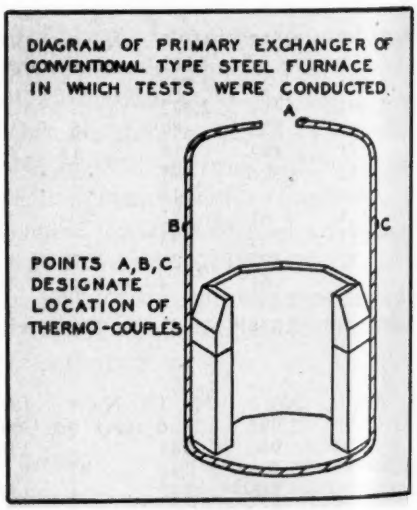


DIAGRAM OF PRIMARY EXCHANGER OF CONVENTIONAL TYPE STEEL FURNACE IN WHICH TESTS WERE CONDUCTED.
A
B
C
POINTS A,B,C DESIGNATE LOCATION OF THERMO-COUPLES

The chart curves *in Fig. 1 were plotted from the average of the temperatures at the three locations marked A, B, and C in this diagram.*

The temperatures at these points were high because no blower air was used to cool the direct heating surfaces. These temperatures are of consequence only in relation to each other.

Average temperatures at points A, B, and C show insulating firebrick increased 20% over steel, and 20% over hard firebrick.

*Dennis is manager, Oilheating Supplies Div., Boston Machine Works Co., Lynn, Mass.; Nelson is national field representative for the Division.

presence of a red hot refractory material." The common sense of this law is easily understood and the material with which this desired condition can be best obtained is a good grade of genuine insulating brick. This material will glow cherry red in fifteen seconds after the burner starts and therefore, you adhere to this fundamental law throughout the entire running cycle of the burner. Smoke tests and CO_2 readings will be far more constant throughout the entire cycle than would be the case if hard refractory or steel chambers are used. The reason for the quick glow of insulating brick is because of the fact that it absorbs very little heat, due to its porosity, and therefore, builds a rapid surface temperature.

Radiant Heat an important Factor

Another most important value obtained from a bright cherry red hot chamber is the radiant heat factor. The heat transmitted to the heat absorbing walls of the boiler from the luminosity of the flame and chamber is very important. Recognizing that an insulating brick chamber became much more brightly luminous and in a much shorter time, we conducted a test to prove the relative value of the radiant heat obtained from an insulating brick chamber versus steel or hard chamber. Fig. 1 describes and shows the results of this test. It should be pointed out that we were, in this test, only attempting to determine the relative temperatures on the heat absorbing walls caused by the radiant heat from one chamber as against the other. In each case the chambers were the same dimension, the same burner and nozzle was used, and each test was run from a cold start. A study of the test results will show a substantially superior performance from the insulating brick.

There are other factors that make good insulating brick far superior for chamber construction. Again because of the porosity it absorbs combustion sound resulting in quieter performance, it is easy to cut and form where required, and being light, it reduces shipping weights, an important consideration with today's high transportation costs.

It must be recognized that the combustion chamber is the "mixing bowl"

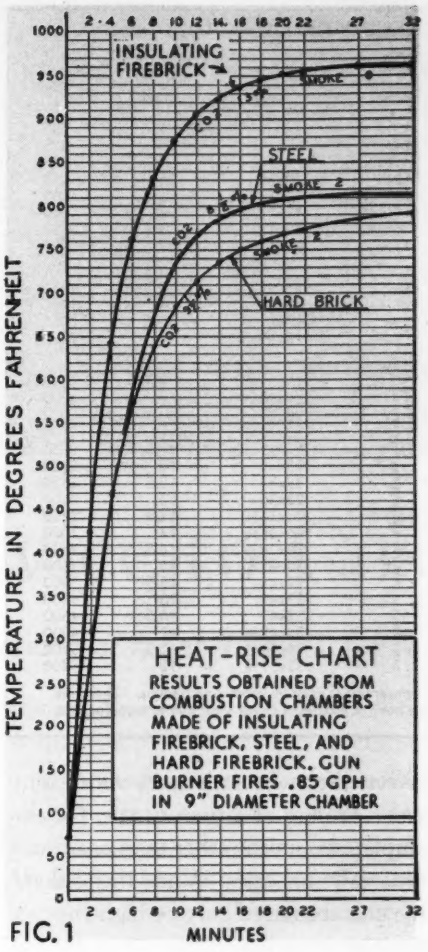

INSULATING FIREBRICK
STEEL
HARD BRICK
SMOKE
TEMPERATURE IN DEGREES FAHRENHEIT
MINUTES
HEAT-RISE CHART
RESULTS OBTAINED FROM COMBUSTION CHAMBERS MADE OF INSULATING FIREBRICK, STEEL, AND HARD FIREBRICK. GUN BURNER FIRES .85 GPH IN 9" DIAMETER CHAMBER

FIG. 1

where the most important factor of all takes place, the proper burning of your air-oil mixture. The burner itself simply prepares the oil and air for burning. The big job is done in the chamber.

Our laboratory and field work have proven beyond a doubt that chamber dimensions are critical if top performance is to be obtained. Chamber shape is also important. Whether the boiler or furnace is round or square, whenever it is possible we want to use a round chamber. The reason for this is simple. If an ordinary household burner with a capacity of .75 to 2.00 gallons per hour is placed on a table and the fan started you can feel the air coming off the end cone as much as six to eight feet away. In your chamber this air does not completely mix with the oil at the end cone and a substantial amount of this air actually strikes the back wall of the chamber. In a round chamber that air can sweep back, as shown in Fig. 2, and will continue to mix with the atomized oil, thus further supporting combustion. If the chamber is square cornered the air still strikes the back wall, goes to the right and left and strikes another wall and eddy currents are built up in each corner, as shown in Fig. 3. This air never returns to the atomized oil area and sneaks up in each corner to the top of the chamber and is off up the flue reducing gas temperatures and CO_2 readings. To make up for this lost air the burner air shutter must be opened further and sometimes you do not have enough air or shutter opening available and you cannot clean your fires.

On larger sectional boiler installations, and occasionally in small heaters, the physical limitations of the heater will not accommodate a proper round chamber and a square or rectangular chamber must be used. In such cases the square corners must be eliminated by a 45° fillet in each corner as shown in Fig. 5. This fillet will eliminate the eddy currents forming in the corners and will divert the air back to the atomized oil to support combustion. The fillets in the front of the chamber near the end cone also eliminates eddy currents and brings the red hot refractory nearer to the air oil mixture for better combustion.

The nozzle should be high enough above the floor of the chamber so that the spray of the nozzle will not strike the floor causing impingement. This dimension should be held at a safe minimum however. The proper height (floor to nozzle) for the great majority of burners is given on the combustion chamber data sheet, Fig. 4. For sunflower flame burners the manufacturer may recommend about one inch more

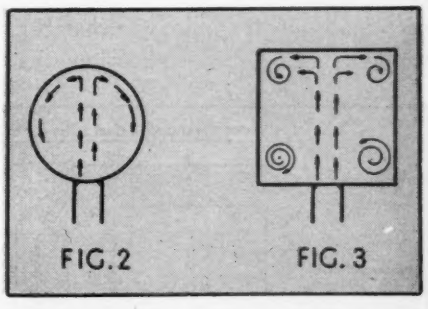


FIG. 2 FIG. 3

Fig. 2 *shows how in a round combustion chamber the gases can sweep back and continue mixing with atomized oil.*

Fig. 3 *shows how, in a square-cornered firebox, the air still strikes the back wall, goes right and left and strikes other walls. This air travels up each corner of the firebox, reduces gas temperatures and CO_2 readings.*

FIG. 4 COMBUSTION CHAMBER DATA

	Oil Consumption G P H	Sq. Inch Area Combustion Chamber	Square Combustion Chamber Inches	Dia. Round Combustion Chamber Inches	Rectangular Combustion Chamber Inches Wth. x Lgth	Height From Nozzle to Floor Inches	Sq. Ft. of Steam Rad. (Approx.)
	1.00	80	9x9	10⅛	.....	5	300
	1.25	100	10x10	11¼	.....	5	375
	1.35	108	10⅜x10⅜	11¾	.....	5	405
80 Sq. In. Per Gal.	1.50	120	11x11	12⅜	10x12	5	450
	1.65	132	11½x11½	13	10x13	5	495
	2.00	160	12⅝x12⅝	14¼	11x14½	6	600
	2.50	200	14¼x14¼	16	12x16½	6.5	750
	3.00	240	15½x15½	17¼	13x18½	7	900
	3.50	315	17¾x17¾	20	15x21	7.5	1050
90 Sq. In. Per Gal.	4.00	360	19x19	21½	16x22½	8	1200
	4.50	405	20x20	Round Combustion Chambers usually not used in these sizes	17x23½	8.5	1350
	5.00	450	21¼x21¼		18x25	9	1500
	5.50	550	23½x23½		20x27½	9.5	1650
	6.00	600	24½x24½		21x28½	10	1800
	6.50	650	25½x25½		22x29½	10.5	1950
	7.00	700	26½x26½		23x30½	11	2100
	7.50	750	27¼x27¼		24x31	11.5	2250
	8.00	800	28¼x28¼		25x32	12	2400
	8.50	850	29¼x29¼		25x34	12.5	2550
	9.00	900	30x30		25x36	13	2700
100 Sq. In. Per Gal.	9.50	950	31x31		26x36½	13.5	2850
	10.00	1000	31¾x31¾		26x38½	14	3000
	11.00	1100	33¼x33¼		28x39½	14.5	3300
	12.00	1200	34½x34½		28x43	15	3600
	13.00	1300	36x36		29x45	15.5	3900
	14.00	1400	37½x37½		31x45	16	4200
	15.00	1500	38¾x38¾		32x47	16.5	4500
	16.00	1600	40x40		33x48½	17	4800
	17.00	1700	41¼x41¼		34x50	17.5	5100
	18.00	1800	42½x42½		35x51½	18	5400

NOTE.— The above data applies to the majority of conventional pressure atomizing burners. There are some models of burners that will require a different height from floor to nozzle. Consult your burner manufacturer.

height than shown on this data sheet in which case we would recommend following such instructions. Our tests have shown that even on sunflower-flame burners the height (floor to nozzle) shown is adequate.

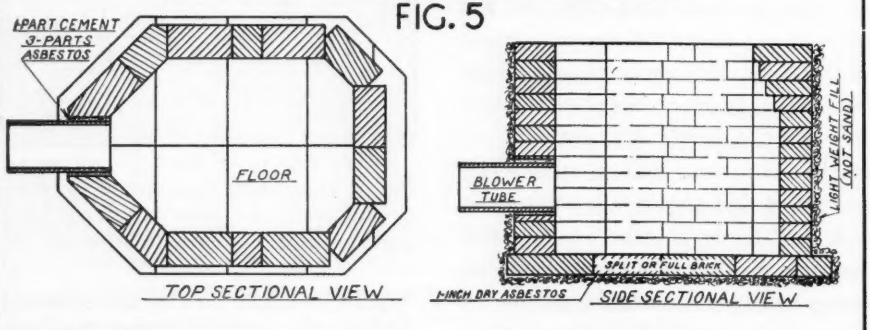
The height of the chamber above the nozzle should be twice that from the floor to the nozzle as explained in Fig. 5. The reason for twice as much refractory above the nozzle as below is that we want all of the combustion to take place in the presence of red hot refractory. Above the chamber there should be no flame, only completely burned gases.

In some large boilers if this rule of twice as much refractory above the nozzle as below is applied, the chamber would be too high, nearly reaching the crown sheet. In such cases we recommend the use of a twin nozzle, for example, two seven rather than one fourteen gallon nozzles. When this is done the chamber need only be high enough for a seven gallon nozzle. If to get the proper height of chamber to burn the oil right you have to cover up more than three or four inches of the water leg of the boiler, it is good practice to build the back wall the required height and gradually lower the height one brick at a time as you come toward the burner. This exposes more heat absorbing area at no cost to combustion.

Whenever the flue travel of a boiler is in the rear it is desirable to corbel the back wall, as shown in Sketch E to cause the hot combustion gases to make a sweep back toward the boiler door

Recommended Construction For Rectangular or Square Chambers

FIG. 5



NOTE.—SQUARE CORNERS, WHICH SET UP COMBUSTION DISTURBING EDDY CURRENTS, HAVE BEEN ELIMINATED.

THE LENGTH AND WIDTH DIMENSIONS ON CHART REPRESENT THE FULL SQUARE OR RECTANGLE WITHOUT THE CORNERS ELIMINATED.

NOTE.—THE THROWBACK CONSTRUCTION ON THE TOP OF THE BACK WALL IS IMPORTANT PARTICULARLY ON SECTIONAL BOILERS WHERE GAS TRAVEL IS UP THRU THE BACK SECTIONS OF THE BOILER.

thus doing a more complete wiping job on the crown sheet of the boiler.

You must recognize that there are different insulating brick required for various ranges of firing rates.

If you are determined to do the best possible job of burning oil you must recognize that the A No. 1 consideration must be to burn the oil completely converting it to hot gases. In our opinion this must be done by adhering to the procedures described.

❖

Maine considering oilburner Rules

JOSEPH A. P. FLYNN, fire prevention director of the State Insurance Department, at a September meeting of the Maine State Legislative Research Committee stated that he felt the state needs new legislation to reguate the installation of oilburning equipment in homes. He recommended that the committee consider the feasibility of licensing oilburner installers and urged that manufacturers be required to use available safety equipment.

Flynn pointed out that Maine now has no regulations, this year's Legislature having rejected a bill introduced to accomplish this, and many people install their own oilburners. He admitted that the equipment was satisfactory but that installation instructions were not always followed.

Some form of regulation at the state level was favored by Fred N. Beckwith, representing the Oil-Heat Institute of New England; Edward P. Hacker, president of Ballard Oil and Equipment Co., Portland and Charles Peirce, representing the Maine Independent Oil Dealers Association.

Beckwith suggested appointment of a committee of ten, five representing the oilheating industry and five representing fire departments, to study the problem. Donald Dean, secretary of the Auburn Oil Burning Board, declared that a system of licensing oilburner installers in his city had served no useful purpose. "Licensing," he said, "definitely is not the answer." Leroy Snowden, who represented the Maine Petroleum Institute, cautioned against requiring manufacturers to use any particular equipment.

Visualize Service to Customers

Princeton Fuel Oil Co. illustrates just what They'll get for $19.95

ONE OF THE PROBLEMS faced by any oilheating dealer in launching a new type of service contract, particularly one including all parts, is making the customer understand what oilburner service actually embraces. The customer never sits around thinking of his burner in terms of its many parts . . . he's never seen most of them, doesn't even know they are there. If he thinks of burner service at all, he vaguely remembers seeing men in the back room at the dealer's place and understands that they will appear on call if the heat stops.

John F. Hoff, Jr., president of Princeton Fuel Oil Co., Princeton, N. J., solved this problem by picturing in considerable detail the many things that will be done, the parts that will be covered, under a new service contract first offered last spring.

Like other dealers, Hoff had tried out a variety of service plans since his company started back in 1934, but by now he was convinced that the right one would include parts replacement on the burners. Natural gas will be in Princeton in another year or two. It will not be cheap gas, but the utility will obviously play up freedom from service, so Hoff wanted to get the jump by making service as painless as possible before they get there.

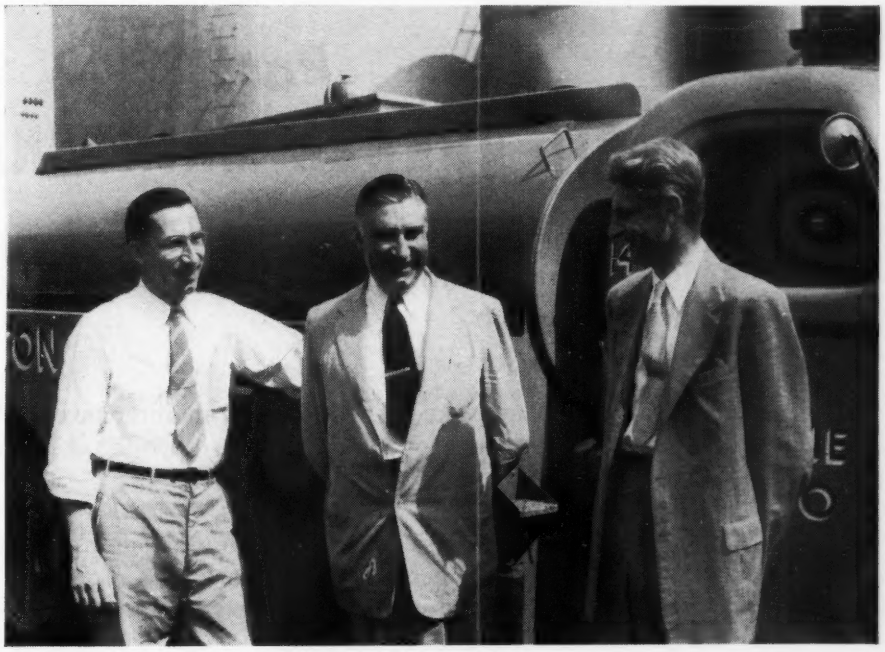
Last year the company had used no service contract of any kind. It sold a summer clean-up and then provided emergency service at call rates. Its customers, then, were not too familiar with the idea of service contracts.

To introduce a contract including all parts, Hoff called in a New York merchandising consultant, Kirk B. Shivell,* who has had considerable background in the oilheating industry. Shivell proposed a four-page mailing piece which would not only tell all about the new contract, but would also illustrate the work to be done and the coverage included. As it turned out, the folder carried 27 pictures.

To establish the $19.95 price, Hoff brought in his general manager, Karl H. Schmaelzle, who undertook a survey of the Company's past experience on service costs. Schmaelzle, incidentally, is a retired division manager for Shell Oil who tried loafing in Arizona, got bored and came back East to join his old friend Hoff who had bought a lot of fueloil from him in the New Jersey division.

The two inside pages of the folder are illustrated on the two following pages; then continue with the story on page 72.

*Shivell, at 424 Madison Ave., New York, has specialized in oilheating and fueloil sales promotion and development.



Joseph S. Hoff II, *vice-president,* **John F. Hoff, Jr.,** *president, and* **Karl H. Schmaelzle,** *general manager, all of Princeton Fuel Oil Co.*

Complete Oil Burner Maint

Part 1
RECONDITIONING AND ADJUSTMENT

The following service is desirable once a year to remove the soot, dirt and scale which gather in a furnace and reduce its efficiency; and to clean and adjust your oil burner.

Remove soot and scale from the furnace by wire brushing and vacuum cleaning.

Clean flues and smoke pipe to base of chimney.

Check the boiler for rust and sediment.

Clean oil burner strainer, nozzle, electrodes, air tube and fan.

Inspect pump, oil lines and tank.

Lubricate the burner motor, blower motor or circulator motor and pump.

Check all controls.

Adjust the burner for efficiency and economy.

Part 2
OIL BURNER MAINTENANCE

The following service is provided to keep your oil burner in efficient condition and adjustment throughout the entire heating season.

We make inspection and maintenance calls during the fall and winter to assure proper adjustment of your oil burner for continuing efficiency and economy.

Regardless of how thoroughly any equipment is cared for, there may be times when emergency service is required. We will provide any emergency service during the entire year and make any repairs that are needed by the oil burner or controls.

tenance with Parts Protection

Part 3

REPLACEMENT OR REPAIR OF DEFECTIVE PARTS

Should any of the following oil burner parts or controls become defective as a result of normal wear (damage due to storm, flood, fire or other external causes is excluded), we immediately will replace or repair them at no additional cost to you:

AQUASTAT

BELLOWS

COUPLINGS

ELECTRODES

FAN

FUEL OIL PUMP

FUEL OIL STRAINERS

LEADS AND WIRING

LOW WATER CUT-OFF

NOZZLE

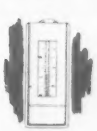
OIL BURNER MOTOR

PRESSURE REGULATING VALVE

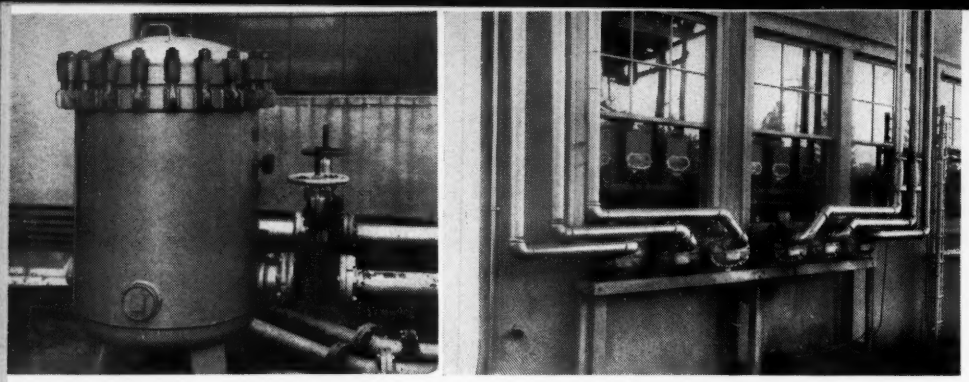
PRESSURETROL

PROTECTORELAY

TRANSFORMER


THERMOSTAT

TURBULATOR



Hoff makes an advertising feature of metered fueloil, using this Bowser equipment. The loading rack meters are inside of the office but clearly visible to the driver on the truck.

Taking two years' service records, he determined how many of each burner part had been supplied and at what cost. It figured an average per year of $2.60 per customer as the Company's net cost of all parts supplied. Total costs for material and labor had averaged $11.00 per customer. But not all customers had been getting the summer clean-up and there had been little other preventive maintenance service.

With just over 500 customers covered by the new contract this first year, the outlook is that the $19.95 price should comfortably cover all direct costs and overhead on the clean-up, parts replacement, emergency calls and two check-up calls during the season as promised.

About 7,000 of the folders describing the service plan were mailed out to all known oilburner users in the Princeton marketing area. The 500 that came in represented less than a fifth of Hoff's own customers but did include a number of families that had not previously done any business with the company, and several of those have since been converted to new fueloil accounts.

The contracts came in within 30 days or they didn't come at all. After the mailing the Company did considerable telephone follow-up and also gave a small commission to service men and fueloil drivers for getting them in. With so good a start the first season, Hoff believes that he can get 90% of his fueloil accounts signed up for service contracts within three to four years and then there will be a good possibility of switching over to including service in a premium fueloil price.

Hoff's service men work in zones and get to know the individual burners quite well. Under the contracts they will get around oftener to those that they know are critical. As an example, a home with a clothes dryer near the oilburner needs a call every two months . . . the lint chokes the fan. In the summer and early fall, when clean-up and new installation work is at a peak, the Company is able to hire a few good husky students from Princeton University as helpers rather than using oil truck drivers on this work.

That brings up the point that Hoff has a policy of keeping a minimum crew of fueloil drivers the year round and then adding temporary help in the busy winter season. He is fortunate in

. . . . Visualize Service

being able to get very good temporary drivers. A lot of potatoes are raised in the Princeton area. The potato farmers work from the middle of March to the end of October in their fields. They are specialists and do no general farming that would tie them to the place every day. From November into early March Hoff uses some of these farmers. They work enthusiastically and don't worry about long hours nor cold weather. They don't care much for coffee stops nor customer visits, so their performance records would bring a blush to many a professional driver.

Hoff has found that he reduced burner service requirements considerably by the way he treats his fueloil. First he started filtering all of the oil between the bulk tank and the truck, using a large positive filter made by Bowser. Getting his fueloil from four suppliers, this filtering helped make it more uniform in cleanliness characteristics. But the filter would clog up much too fast and the elements had to be swapped too often.

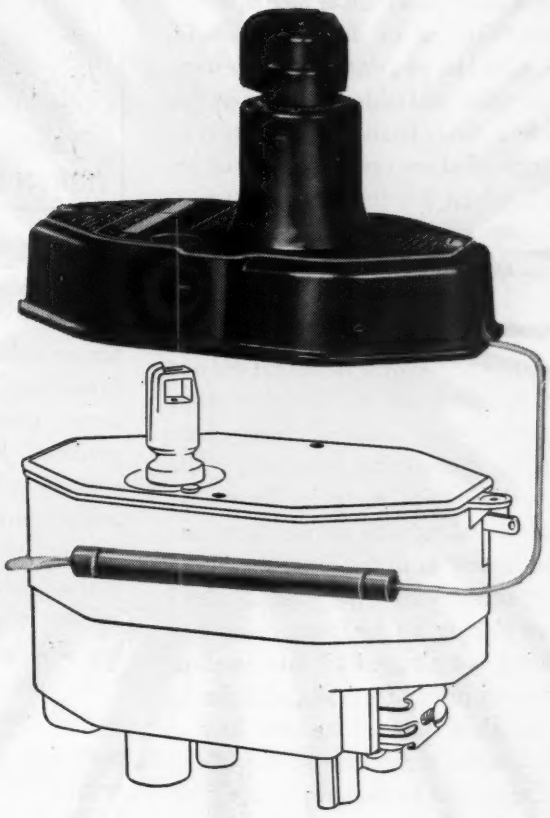
The company then tried putting additives into the bulk tanks. They tried numerous varieties. Some were useless, simply rackets . . . others had merit, ranging up to excellent. All Princeton Fuel Oil now gets an additive, one gallon to the thousand as it goes into the bulk tank.

Hoff points out that in trying additives the dealer must have some patience. After determining the best additive among those tried, it yet took a full season to get everything cleaned up—the bulk tanks, the truck tanks, the customer tanks. Since then the fil-

(*Please turn to page 156*)

demand DETROIT CERTIFIED CONTROLS

Now You Can *Add-up* Big, New profits with this Remarkable, New *Add-on* Control!



DETROIT'S outstanding, new CRC-239-MP Flame-Modulator Add-on Control is a sure-fire bet to ring up new sales, new profits for you! Entirely mechanical in operation and designed for quick and easy installation on the **DETROIT** CRC-239 Manual Float Valve, this remarkable control provides the user with complete, low cost thermostatic control of his heating unit. A large, easily adjusted dial permits the selection of any desired temperature and provides modulation of the flame of gravity type oil burners depending upon the heating requirements of the room. A natural for both new and replacement sales, the CRC-239-MP requires no electrical connections, thereby eliminating the time and expense of wiring. Place your order with your **DETROIT** Wholesaler today and cash in on this great new profit-winning **DETROIT** product!

Write for Bulletin No. 237.

DETROIT CRC-239-MP
FLAME-MODULATOR ADD-ON CONTROL

- ★ Provides Complete Thermostatic Control
- ★ Entirely Mechanical—No Wiring Needed
- ★ Easily Installed
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Useful Ideas from the 1951 Contest

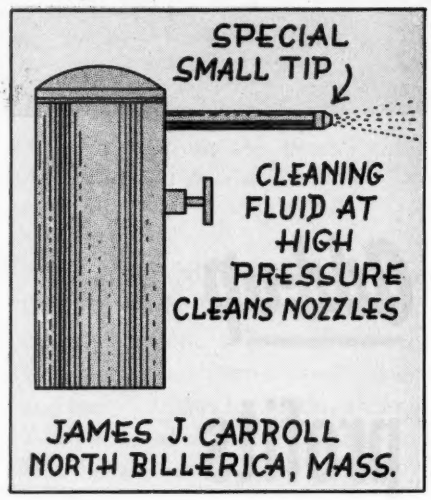
Some of these Entries almost won big Prizes; italicized Words pay off now

THE WINNERS of the 1951 Useful Ideas Contest, which was run by FUELOIL & OIL HEAT and closed on August 31, have received their prizes totalling $1,000, and have seen their winning ideas in the October issue.

Here tribute is paid to ideas which, though not considered tops by the judges, have exceptional merit. In addition to the honor and recognition of seeing his idea in print, each contestant whose name and address is given in this article receives financial satisfaction at the rate of three cents for each of his words which is printed here in italics. Where fewer than 167 of a contestant's words appear in italics, he receives a minimum of five dollars.

Among the hundreds of ideas sent in to the contest were some that did not qualify as original and useful to other oilheating men. Included among these were a few ideas that missed the mark by a wide, wide margain. Here's an example. Along with the excellent material he sent in to the contest, a Newark man submitted the "useful idea" of employing an air compressor for blowing out plugged oil lines, testing tanks and piping for leaks, and checking tankless heaters. He sent in five photographs of eight-by-ten size of the air compressor he declares he designed and built, which can provide 300 psi air pressure. Our point here is, of course, that air compressors and compressed air are used regularly by many burner dealers, and especially by industrial-burner dealers for pressure-testing oil lines. Back in the early 1930's the idea of making a portable air compressor out of an old Socony-Arrow burner appeared in print.

This idea did not quite draw a check for the man who submitted it. Clean the carbon and soot from ignition points and stack control bimetal elements by soaking them in a mixture of 50% muriatic acid and 50% water. The Portland, Oregon man who unsuccessfully sent in this idea used the term "pure muriatic acid," and that got us to wondering if he means hydrochloric acid. Those FUELOIL & OIL HEAT readers who are using muriatic acid for removing lime from tankless heater coils, in the significantly cautious way the magazine outlined in detail, should know the commercial grade of hydrochloric acid is often colored yellow by impurities and is termed muriatic acid. Anyhow, field try-outs of the Portland, Oregon idea did not bring out its unusual efficacy, but brought on worries that recommending the idea to burner men at large might result in damage to men and clothes by the strong muriatic acid.



A check for the following item goes to James J. Carroll, Chadwick St., North Billerica, Mass.

"During recent years heating units of low capacity have become popular.

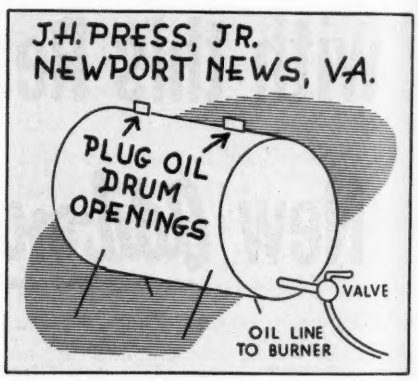
"But on the service end, things were not so good. Plugged nozzles became the cause of many service calls. Sometimes a service man would clean a nozzle two or three times before he got a good flame. Particles of dirt were easy to pick up while cleaning a nozzle.

"This got me to thinking of an easy way to clean these low gph nozzles. My first thought was compressed air, but I had to count that out. My next thought was something with a good spray. To provide this, I had a small pump-up oil can altered, making the tip so small that a push on the plunger would send out a high-pressure spray. Any good cleaning fluid is used. The high-pressure spray of cleaning fluid dissolves the sludge in a nozzle and, most important, washes away the dirt particles that used to give all the headaches after I cleaned a nozzle."

Our hearty congratulations to James Carroll! No better way has ever come to our attention for getting nozzles clean while working with hands that are dirt-encrusted.

The following idea from J. H. Press, Jr., Newport News, Va., can be used by many service men not now using it.

"The problem is to repair a bibb or valve on an oil drum or oil tank that's not empty. Regardless of amount of oil in tank, plug its fill and vent holes. Remove the bibb or valve. The resultant vacuum will obligingly keep almost all the oil in the tank. You have a can ready to catch the little oil, maybe a quart, that gets away on you. Repair the defective valve or bibb, then leave things at the top of the tank as you found them."



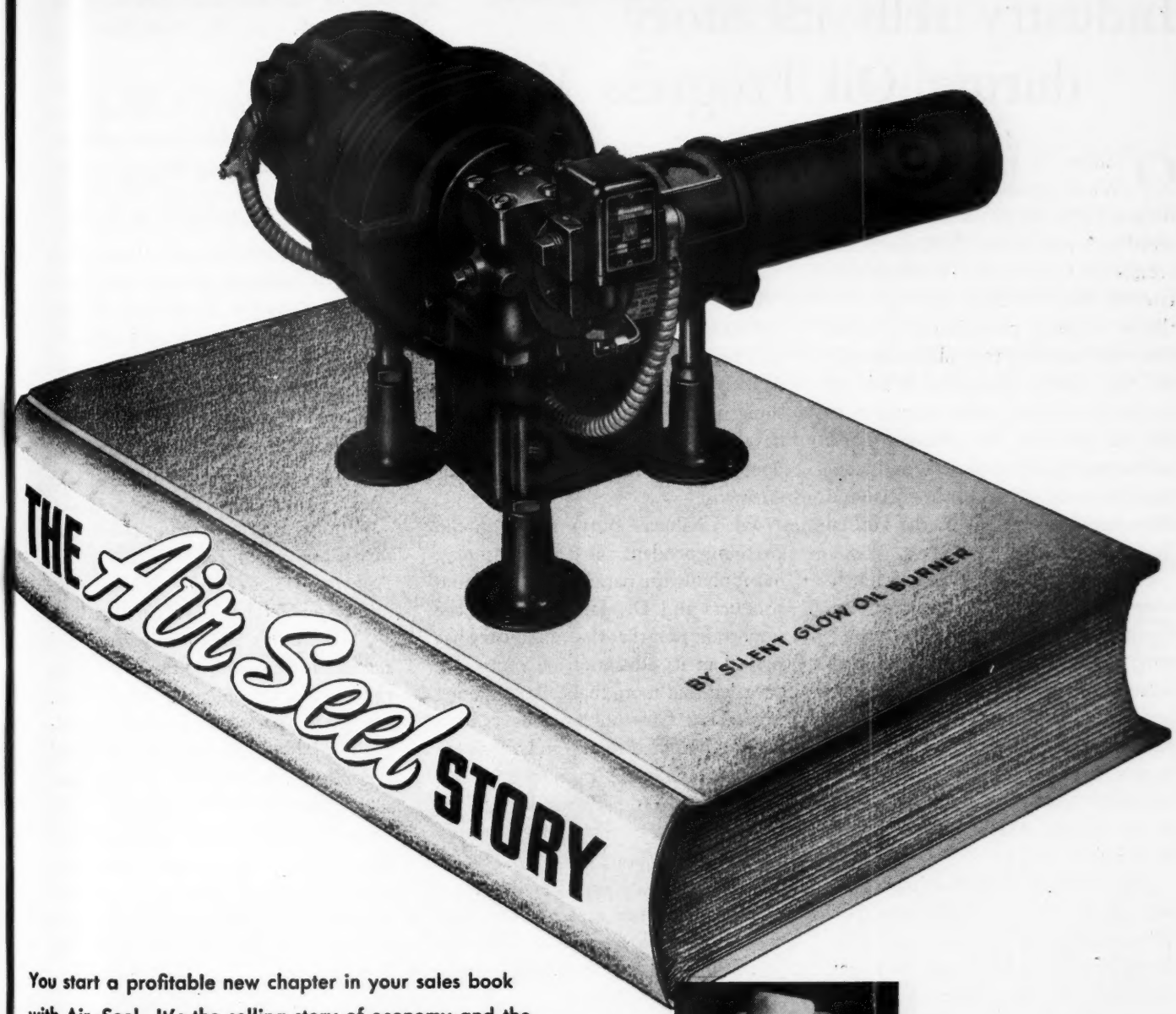
FUELOIL & OIL HEAT technicians were so uncertain and intrigued with the following entry from Maryland, that finally they decided to present it here so that FUELOIL & OIL HEAT readers could make up their own minds concerning it. Just see if your opinion of the idea doesn't change as you read through it, or after you read it two or three times. It is good to send a check for this item to Joseph F. Bauer, Carrington Drive, Fullerton, Md.

"After trying several methods for putting humidity into a house via the warm-air furnace, we have come up with a de luxe job.

"First, we take a standard humidity

(Please turn to page 152)

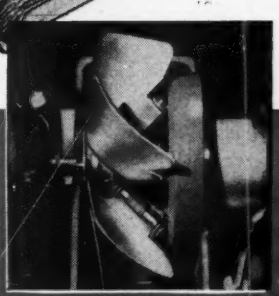
YOUR *BEST* SELLER



You start a profitable new chapter in your sales book with Air-Seel. It's the selling story of economy and the only oil burner that *conserves* the heat it makes . . . and there's no mystery about the savings customers get.

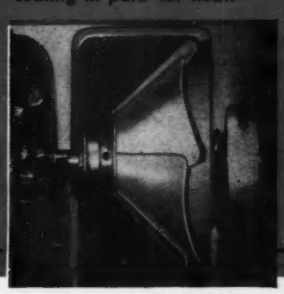
Here's how it works. When the Air-Seel stops, the blades of its unique, patented fan automatically fold flat against each other. Heat-wasting cold air — which usually rushes in through ordinary oil burners' intake to cool the heating system — is shut out by the Air-Seel fan. At the same time, valuable heat is sealed in . . . saving fuel and fuel-dollars, too. Right there you have an easy-to-tell . . . easy-to-sell sales approach, that's even easier to prove.

Let the Air-Seel oil burner show you the way to bigger sales and profits. This coupon will bring the interesting facts to help you start . . . right now.



Air-Seel Fan in "on" position. Drawing in just the right amount of air for economical operation.

Air-Seel stops . . . and fan blades fold flat, locking out heat-wasting cold air . . . sealing in paid-for heat.



Mail coupon today!

To: THE SILENT GLOW OIL BURNER CORP.

850 Windsor Street, Hartford 5, Connecticut
1500 So. Western Ave., Chicago 8, Illinois

Rush the facts on Air-Seel to me . . . today.

Name: _____

Company: _____

Street & No.: _____

City: _____ **State:** _____

Those Who Know Choose SILENT GLOW OIL BURNERS

Industry tells its Story during Oil Progress Week

OCTOBER 14 to 20, Oil Progress Week, proved to be the most extensive yet in the series which is sponsored each year by the Oil Industry Information Committee, American Petroleum Institute. Men and women in the oil industry participated in a variety of events that took place throughout the country during the Week, all designed to invite public attention to the oil industry, its operations and achievements, its progress and continuing contributions to the social and economic development of the United States.

Community leader—oil men's luncheons and dinners, during which oil company executives and other prominent speakers discussed the industry, were key features of this year's observance. A total of more than 35 such affairs were held, augmented by special events, parades, exhibits, showings of the OIIC's new motion picture, "Man on the Land" and literally hundreds of speeches.

New York's Waldorf-Astoria hotel was the scene of the fourth annual Oil Progress Week luncheon in New York, with H. S. M. Burns, president, Shell Oil Co., the principal speaker. Approximately 1500 oil men and their guests also heard other talks by W. Chalmers Burns, president, Hartol Petroleum Corp. and Dr. William Jansen, superintendent, New York City Public Schools. George D. McDaniel, manager, eastern marketing region, Socony-Vacuum Oil Co. and chairman, New York-New Jersey OIIC, presided.

The Shell Oil Co. president declared that in spite of the present tremendous petroleum production, the nation can look forward with confidence to a continued increase in the volume of oil known to be in the ground or proven reserves. Mr. Burns pointed out that the search for oil could not have been achieved by any single company, or any monopoly of state ownership, but only through "individual initiative of hundreds of producing companies operating independently of each other in a spirit of the keenest competition and rivalry." Moreover, he continued, they will keep on operating this way so long as there remains a reward for success. "All of what I have said," Mr. Burns concluded, ". . . it is hoped, will lead to a realization that it will be a sorry day for these United States when anything is done to impair the continued development and growth of what we hope you will regard as your oil industry."

W. Chalmers Burns spoke on the part independent oil companies play in supplying the nation with petroleum products and Dr. Jansen told of the important part that the oil industry has played in its education of youth. He revealed that more than 20,000 young New York City public students have seen and studied the oil industry's exhibits which were presented at last year's luncheon. "The industry," he said, "has materially and generously assisted the Vocational High School Division in increasing facilities for training oilburner repairmen and installation mechanics, and has promised its continued cooperation in the expansion of the program, including the placement of qualified students in jobs after graduation."

He referred to the recently completed work of the Oil Industries Educational Commission of the Advisory Board for Vocational Education, City of New York. With more than 80 oilburner and accessory equipment manufacturers sponsoring the movement, oilburner training courses have been established in the Thomas A. Edison Vocational High School, Jamaica, N. Y., the Samuel Gompers Vocational-Technical High School, Bronx, N. Y., and the Brooklyn Technical High School.

(*Please turn to page 153*)

. . . . . .

Perhaps typical of many events was this gathering of 1,000 people at the Ankeny (Iowa) High School gymnasium on October 9 to observe oil man V. W. Smith's 25th anniversary and sound the keynote for the first "grass roots" Iowa Oil Progress Week event. Mr. Smith, president, Iowa Independent Oil Jobbers Association, promoted the joint celebration and acted as master of ceremonies. The Ankeny High School band provided music, a local quartet sang several numbers and each person attending received a gift and was served refreshments. Oil industry and other movies were shown during the evening.

SAY

Goodbye to Draft Troubles!

You can forget about natural draft . . . You don't even need a chimney!*

The stack you see here is merely an *exhaust pipe* to conduct the combustion gases out-of-doors. A rugged, heavy duty fan is *built into* the unit —right inside the smoke pipe collar —to *push* the products of combustion up the stack . . . like the exhaust pipe on a Diesel engine! So this unit needs *no* natural draft at all—it *creates its own draft.*

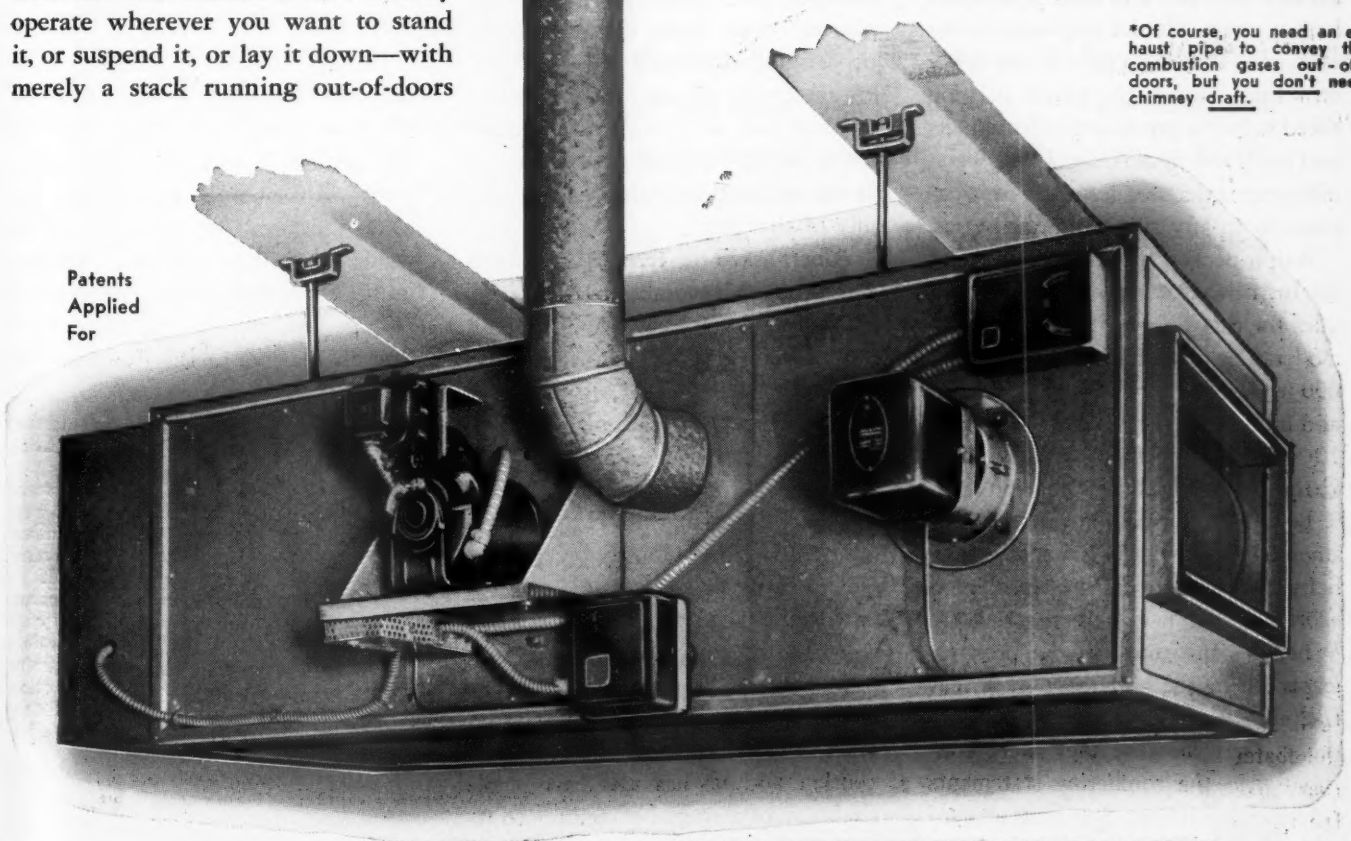
You can forget natural draft questions with this unit because it will actually operate wherever you want to stand it, or suspend it, or lay it down—with merely a stack running out-of-doors and up above the roof line (subject to your local building regulations, of course).

SELL this unit for heating homes, stores, garages, warehouses, factories (a lot of small factories are now opening up in the defense effort, and they will need packaged heat like this which is free from chimney requirements)—or sell it for schools, churches, aircraft hangars, *any* type of building, regardless of the draft or the chimney. Mail the coupon for details.

The Fan Does It!

There is a rugged, heavy-duty fan built into the unit to create the draft to *push* the products of combustion up the stack. This fan makes it possible to forget about natural draft and install the unit anywhere.

*Of course, you need an exhaust pipe to convey the combustion gases out-of-doors, but you don't need chimney draft.



Patents Applied For

THIS IS A MASTER KRAFT VCF-110 WARM AIR CONDITIONER

Valuable franchises available — write or wire today

Master Kraft
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AUTOMATIC HEAT

MANUFACTURED BY
HARVEY-WHIPPLE, INC.
Springfield, Mass.

A PIONEER IN AUTOMATIC HEATING

HARVEY-WHIPPLE, INC.
Dept. FO-30, Springfield 2, Mass.

Please send me more information about Master Kraft.

Name .....

Address .....

City ..... State .....

Crawford sees middle Course as OHI Directors study Trends

AT THE QUARTERLY meeting of the Oil Heat Institute directors on October 9, T. A. Crawford, Institute president, visualized oilheating as traveling down about the same road that it's now following. In a review of general economic conditions throughout the country and their probable effect on our business, he sees no reason to expect any serious change in the sales picture, either up or down.

Sales could be higher if more effort were put forth in that direction, but on the other side there will be tighter material restrictions in the first half of the new year that will make some items harder to get. He did emphasize, however, that this is no time to let down on selling because the public is being asked to buy a great range of products and there will never come a time when oilburner orders are tossed in over the transom in any significant quantities.

Ralph Becker, managing director of the Institute, forecast that total burner sales for this year will probably be off moderately from the estimate of 700,000 made last January. Commercial and industrial burner sales will also be 10% lower than the 50,000 estimated at that time, he believes.

Becker expressed concern over the amount of unfavorable newspaper publicity during this year on probable oil shortages that have not materialized. When the Institute sent out press releases during the summer to show that fueloil is plentiful, too few editors ran the material because they were confused over the conflicting statements from other sources. Speaking of general public relations work by the Institute, headed by Lon Casler of Oil-O-Matic, he explained that a number of public relations activities recommended by that special committee had not been carried out because of insufficient staff and funds. Sales of the new Handbook were going well, he reported.

Clark L. Hastings, Rochester Mfg. Co., and chairman of the Accessory Div., reported on the activities of his group, mostly along the lines of membership policies. He announced that his division will again sponsor a luncheon with a big-name speaker at the next Oilheating Exposition to be held in Philadelphia, April 14-18, 1952.

For the Distribution Div., Hollis Albert, chairman, reported that the group insurance fund available to all division members for their employees now had $1,400,000 of policies in force. The deadline date for other dealers to get in on this has been moved to December 15. The costs of group insurance are so low that every dealer should have it for his people. As an example, one company with 18 employees covers them with individual policies ranging from $1,000 to $5,000 life insurance, the amounts depending on their jobs, at a total cost of under $50 a month . . . and tax savings for an incorporated company will pay a big slice of that cost.

Albert asked the Institute to help in getting more favorable rulings from the National Fire Prevention Assn. on indoor storage of fueloil and some relief on the location of fill and vent lines. The Div. wants permission for 1,000 gal. storage in homes and larger allowances in other buildings. The directors voted to assist on this. He then announced that the oilheating calendars for dealers to give their customers have been sold in good number this year and would be continued into 1953.

Joe Collins, Frontier Oil, Buffalo, is chairman of the Distribution Div. program committee for next Spring's convention and he has also been made chairman of a special committee to recruit and train salesmen for the industry. Collins discussed at some length the problems oil men encounter with combination gas and oilburners, in that they use oil only at the peak winter season when fueloil distributors are already swamped with their more loyal customers. He asked that the manufacturers study the implications of this situation.

Hollis Albert then announced that five new directors have been elected for the Distribution Div. These are Edwin D. Newman, Richmond Oil Heat Assn., Richmond, Va., E. F. Marquard, Allied Oil Co., Cleveland, John C. Campbell, Elliott-Lewis Corp., Philadelphia, Alfred Hegeman, Wauwatosa Fuel & Supply Co., Milwaukee, and J Walsh, J. J. Walsh Co., Rochester.

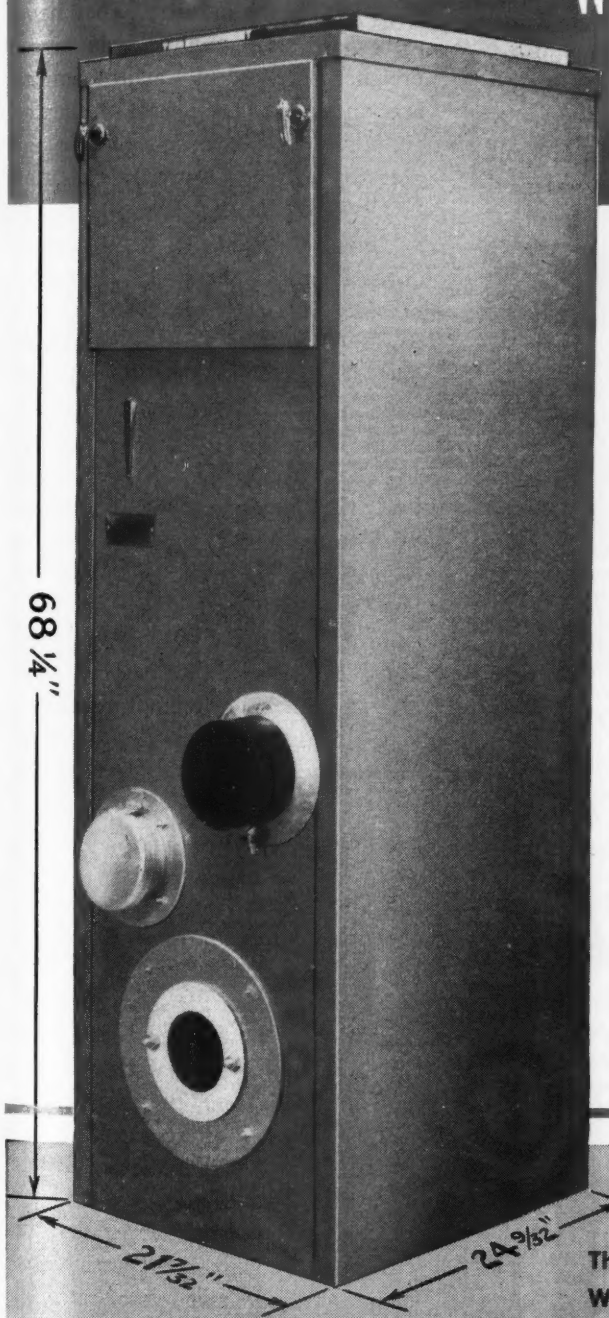
Ted Kaufman, the Institute's technical secretary, reported on a meeting of the Technical Div. held in New York September 26. Present at the meeting were 11 men from nine major oil companies and 11 from the oilheating industry. This group is to serve as a clearing point on technical problems affecting oil and oilburning, with special emphasis on laboratory undertakings. All present at that meeting had voted in favor of reviving this effort which had been dormant in recent years.

Harold Wilkinson, Herco, Institute vice-president and chairman of the membership committee, reported that two new applications from manufacturers had been received too late to be processed for this meeting but would be voted on in January. Then he introduced a new folder just prepared by the Institute, "17 Reasons Why You Should Join OHI." These are the reasons:

1. OHI is the only national organization serving all segments of the oilheating industry.
2. You should assist in the development of over-all objectives, policies and programs for improvement of the industry, and to benefit the public, government and fellow members in OHI.
3. Membership is integrated, from manufacturers of oilburning devices, controls and accessories through dealers and installers of oilburning equipment to the resellers of fueloil, to function for the good of the entire industry from manufacturer through distribution.
4. The Institute actively promotes the advantages of automatic oilheating systems to consumers, both domestic and commercial-industrial.
5. The Institute strives constantly to assure a plentiful supply of fueloil at competitive prices.
6. OHI promotes oil as the best fuel to achieve efficient heating and power supply—economically and continuously.
7. Continued effort is made through the OHI Engineering Committee, Technical Division and technical staff to improve the quality of fuels, the efficiency of oilburners and oilburning equipment.
8. Through its Distribution Division, OHI constantly works to improve installations and provide better service to the public at lowest possible cost.

Kaustine *Presents...*

The JERSEY 75 OIL-FIRED "COUNTER-FLO"



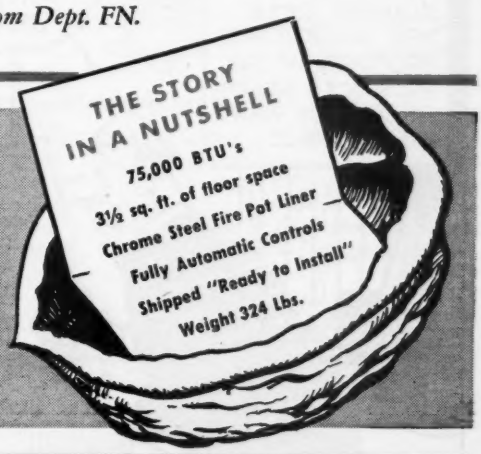
Logical design for the home WITHOUT A BASEMENT!

- Saves time
- Saves material
- Easy installation
- One complete package
- Low initial cost
- Engineered specifically for utility room or closet installation in slab or crawl space homes
- Designed primarily for warm air perimeter heating
- Ideal for large scale, low cost, housing developments

Cut installation costs, overcome metal shortages, discharge warm air from the bottom of the unit directly into the crawl space underneath the dwelling. For conventional perimeter heating, ducts can be formed right in the concrete during slab type floor construction. The use of vitrified clay pipe, in the place of metal ducts, has also proven satisfactory!

We supply all essentials including a 275 gallon fuel storage tank with each and every unit!

Complete details from Dept. FN.


THE STORY IN A NUTSHELL
75,000 BTU's
3½ sq. ft. of floor space
Chrome Steel Fire Pot Liner
Fully Automatic Controls
Shipped "Ready to Install"
Weight 324 Lbs.

There is a KAUSTINE Winter Air Conditioner for every type of home

KAUSTINE QUALITY SERVICE SATISFACTION

Kaustine
COMPANY, INC.
PERRY, NEW YORK

Modulated Warm Air Furnaces from 65,000 to 270,000 B.T.U.
Septic Tanks . . . Pressure Vessels . . . Oil and Gasoline Storage Tanks . . . Truck Tanks . . . Custom Built Fabricated Equipment

9. OHI conducts a continuous program for improving burner standards, safety codes, and works with all important engineering societies, associations and governmental agencies to improve industry codes and regulations.
10. OHI works with government agencies to protect the industry in matters of material supply and pricing in our controlled economy.
11. OHI disseminates and interprets news promptly on government orders and directives.
12. OHI furnishes statistics on equipment sales and fueloil sales.
13. Through surveys and questionnaires the Institute provides essential data to members on many things of which members wish to be apprised; for example, market research, operating practices and material requirements.
14. OHI supplies marketing data and suggests methods and channels of distribution.
15. Manufacturer-dealer relationships are improved through 25 OHI Distribution Chapters and some 1,800 dealer members.
16. OHI programs make possible coordinated effort by dealers in areas where it is vital to protect markets from inroads by other fuels.
17. OHI promotes and establishes ethical trade practices in free and open competition.

Three nominations for additional Institute directors in the burner manufacturer group were then proposed and unanimously voted. These were Rupert Gustafson, Sundstrand Engineering, Laverne Brennaman, York-Shipley, and J. C. Johnson, S. T. Johnson Co.

Reporting for the Traffic Committee, Frank Kirwin of Oil-O-Matic as chairman outlined the proposed parcel post increases, comparing them with express rates, mentioned that oilburner freight rates have more than doubled since the war and another 15% is being asked. His committee is now working on 56 pieces of legislation that may affect the oilheating industry, all trending upward for costs. This committee in a very unobtrusive way is doing a great job for the industry. They have won some cases and will win more. Freight increases of small amounts here and there do not seem significant on individual shipments but in the aggregate they take a lot of money out of factory and dealer pockets.

George Hochstein of Heil, chairman of the Institute's Planning Committee, presented a very substantial list of recommendations for future activities. The proposals included an enlarged bulletin to embrace personnel changes, service, sales and vocational training, and that a committee be appointed to study the development of more statistical information. President Crawford then asked W. J. Smith, Jr., Cleveland Steel, to be chairman of this committee and appointed as additional members Cy Burg, Iron Fireman, Ed Marquardt, Allied Oil, and the local Cleveland manager of Minneapolis-Honeywell, all members being Cleveland men so they can work more effectively.

The Planning Committee also proposed more sales help to dealers, including providing merchandising speakers for their meetings, asked that the Public Relations Committee take more advantage of gas shortages in restricted cities, and asked that a committee be appointed to study membership dues. This committee was then appointed by Crawford to include Ralph Becker, Harold Wilkinson and George Hochstein.

The Show Committee, with Paul Addams, Fitzgibbons, reporting, explained the new schedule of rates for space, the discounts to Institute members and the fact that following the 1952 exposition they are to be held only every two years, alternating with the ASH&VE show. The 1952 exposition, for the first time in several years, is to permit live exhibits in some sections . . . in other words, burners can be fired.

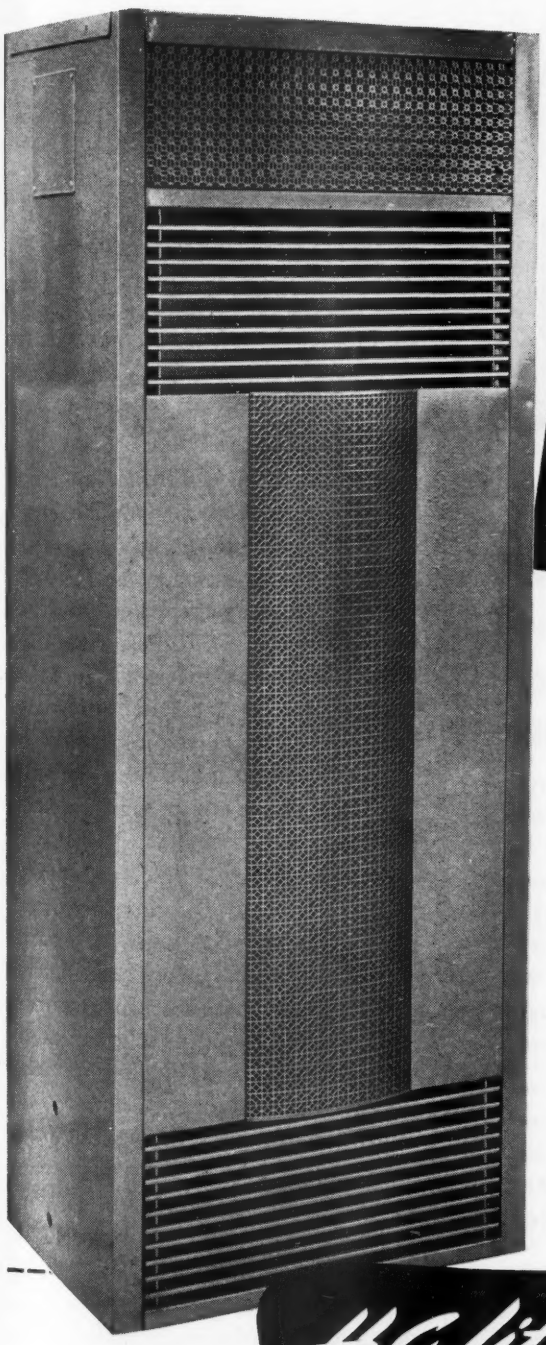
HOW ABOUT THAT?
JUNIPER WRECKED THE NERVES OF THE OFFICE HELP, PREPARING AN ELABORATE WRITTEN PROPOSAL! NO ERASURES, NO FINGERPRINTS, NO NOTHING! IT HAD TO BE PERFECTION ITSELF!
KEEP TRYING AGAIN UNTIL IT'S SUPER-PERFECT! AN IOTA LESS WON'T DO!! I SEE A SMUDGE HERE... AND THE DOT ON ONE "I" IS NOT ROUND.... AND BLA... BLA... BLA... BLA....
HE MADE ME CHASE ALL OVER TOWN FOR THE MOST EXPENSIVE PARCHMENT MADE
I HADDA GET A SPECIAL SILK-LINED TYPEWRITER RIBBON! AN ORDINARY ONE WASN'T GOOD ENOUGH!
B-BUT... I DID IT OVER 14 TIMES ALREADY! IF I HAVE TO LOOK AT THAT THING MUCH LONGER, I'LL GO OUT OF MY MIND!
SO FINALLY JUNIPER GETS THE IMMACULATE PROPOSAL IN THE PROSPECT'S HANDS... AND... LOOK WHAT HAPPENS!!
WELL... ER... MY HUSBAND WILL HAVE TO READ THIS OVER BEFORE WE CAN DO ANYTHING!
THANKS FOR THIS IDEA TO PERCIVAL M. SAX, JR. PHILADELPHIA 40, PA.

more profit selling to small home owners!

When you sell H. C. Little Oil Wall Furnaces you sell the ONLY oil wall furnace with a self-lighting, 100% automatic low-voltage ignition system! This means you'll make more sales because home owners everywhere quickly appreciate a heating unit that actually lights itself and saves up to 30% of usual fuel costs.

more profit selling to building contractors!

You can offer H. C. Little Wall Furnaces at attractive competitive prices. Large-tract contractors specify H. C. Little heating units because they provide self-lighting, uniform whole-house heat at lower first cost (and lower cost operation). Sell H. C. Little Oil Wall Furnaces and get your share of this big-volume business.



NO SHEET METAL DUCTS NEEDED!

more profit opportunity

when you sell H. C. Little Oil Wall Furnaces!

That's because ONLY H .C. Little Oil Wall Furnaces have such important sales advantages as:

SELF-LIGHTING OPERATION! *patented,* self-lighting, 100% automatic low-voltage electric ignition system has no pilot light to waste fuel!

LOW-TEMPERATURE CARBURETION! *patented* H. C. Little Oil Burner operates on an exclusive Progressive Low-Temperature Carburetion Principle which leaves no soot or hard carbon deposits!

CATALYTIC HEAT CONTROL! *patented* H. C. Little catalytic heat control permits operation on low-cost catalytic oils!

SILENT OPERATION! *patented* H. C. Little construction has no moving parts to vibrate, make noise or interfere with radio or television reception!

and many, many more sales-clinching features

H. C. Little Oil Wall Furnace No. 85 (illus.); 65,000 BTU per hour heat output; 79″x 20″x 30″; warm air discharge and cold air intake grilles on both sides of unit; radiant panel on front of furnace; installed either side of chimney or vented by patent flue at top

H. C. Little Oil Wall Furnace No. 60 (not illus.); 42,000 BTU per hour heat output; 51⅜″x 17″x 29″; warm air discharge and cold air intake grilles on both sides of unit; installed either side of chimney or vented by patent flue

For further details about these H. C. Little Oil Wall Furnaces write today to DEPT. 11

H. C. Little Burner Company

SAN RAFAEL, CALIF.

DEALER INQUIRIES INVITED

Factory Representatives:

Baltimore, Md.
Belmont, Mass.
Boise, Idaho
Chicago, Ill.
Columbus, Ga.
Detroit Lakes, Minn.
Fayetteville, N. Car.
Newark, N.J.
Portland, Ore.
Prescott, Ariz.
Reno, Nev.
St. Louis, Mo.
St. Petersburg, Fla.
Salt Lake City, Utah
Seattle, Wash.

Boston Dealers approve Progam to combat Gas

A MEETING, held by the Massachusetts Oil Heating Association, Boston, in the Hampton Court Hotel, Brookline, Mass., on October 16, featured a presentation of a comprehensive program, designed for local oilburner dealers to permit them to combat natural gas competition for domestic home heating. A large audience attended the meeting and approved a motion to implement the Plan for dealers in the Boston area.

Fred N. Beckwith, secretary of the Oil Heat Institute of New England, explained that his organization was sponsoring the Plan throughout New England, that a series of meetings already had been concluded to get it under way in affected portions of Connecticut and western Massachusetts and that additional meetings are being held in the remaining portions of New England that anticipate similar competition.

Beckwith reminded the dealers that organizing against natural gas was not an individual company problem nor one that could be handled by any one association or group. Rather, he said, it is something that must be carried out as an industry project. In the Boston area there are 700 to 900 companies of all sizes that are active in the fueloil and oilburner business, opposed by a half dozen public utilities offering gas for home heating.

The oilheating industry, generally, he remarked, is disorganized, especially when compared with the highly coordinated thinking and planning that characterizes the public utilities campaigns to add home heating to their lines. Moreover, each utility follows a well defined and effective pattern in its promotion and sales efforts.

In outlining the OHI of New England's role in preparing for gas competition, Beckwith pointed out that more than two years ago the Institute investigated what effect the introduction of natural gas had had in other areas. In general, the study revealed that natural gas dominated any market where it was introduced when, or if, the oilheating industry in the area did not organize and present a united front in opposition to it.

New England is the last heavily-populated area in the country to get natural gas supplies, with the exception of the Northwest, and it is coming to New England for the same reason it has been introduced in other areas of the country, he said. Pipeline speculation and the need for the utilities to do something to replace the lighting load lost to electricity and the increasing amount of water heating and cooking going electric, were cited as the principal reasons.

Describing the appealing promotion that public utilities traditionally use to solicit applications from homeowners for the installation of gasheating, with such slogans as "Nature's gift to modern living" and emphasizing that gas is automatic, clean and safe, Beckwith

Eddington
Oil Burner Nozzles

... every one factory-tested for *your* greater convenience and profit!

Yes, for *your* greater convenience and profit! When you install an Eddington Nozzle, you know it is *right* for spray angle, atomization, and rated capacity. What's more — with a large-capacity Monel strainer in each nozzle to keep orifice and slots from plugging — cleaning is a rare event.

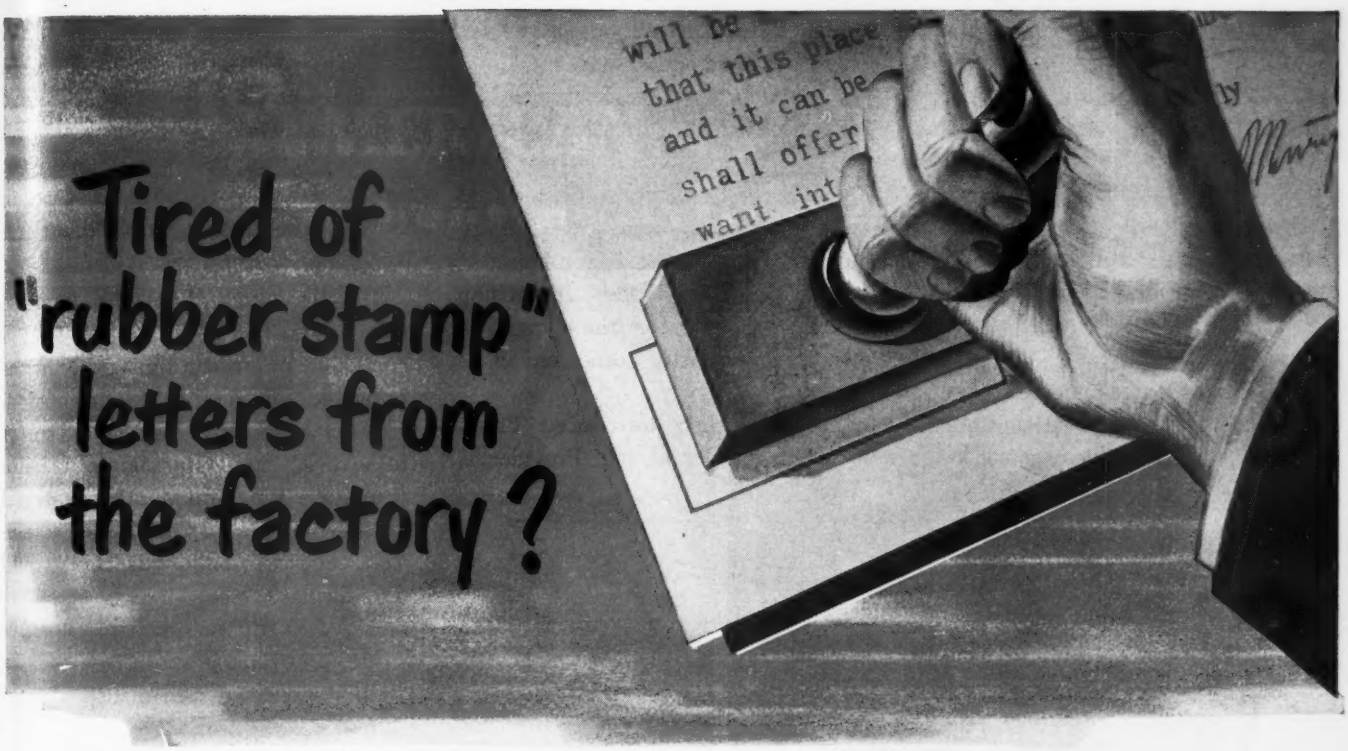
Timely tip: Uncertain period ahead. Eddington oil burner products more important than ever for they keep customer-service interruptions at an absolute minimum.

Want information on any of the items listed? Just drop us a postal; you'll get a quick reply.

Check your Eddington needs here:

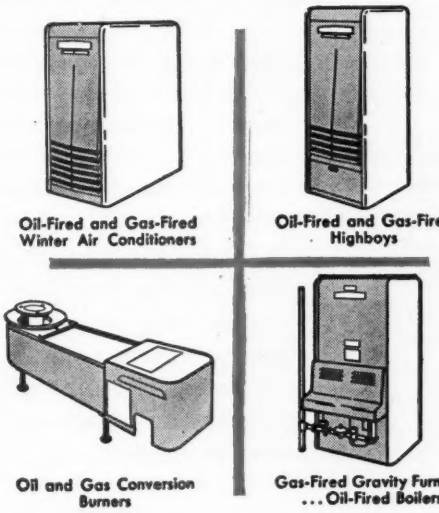
- ☐ FILTERS
- ☐ NOZZLES
- ☐ VALVES
- ☐ STABILIZERS & AIR CONES
- ☐ STRAINERS
- ☐ ADAPTORS
- ☐ INSPECTION MIRRORS
- ☐ SERVICEMAN'S NOZZLE KITS

EDDINGTON METAL SPECIALTY COMPANY
1050 Czarnecki Street, Eddington, Pa.



YOU'LL LIKE DOING BUSINESS WITH HEIL

Many a dealer has found that there's no one as cold as an oversold manufacturer. The salesman who was so interested in you and your orders just doesn't show up. The factory that wrote you such glowing letters now sends an occasional form letter, or just rubber stamps a reply on the bottom of your letter to them. They don't seem to realize that your problems are pretty serious, too, and deserve consideration.



Oil-Fired and Gas-Fired Winter Air Conditioners

Oil-Fired and Gas-Fired Highboys

Oil and Gas Conversion Burners

Gas-Fired Gravity Furnaces ... Oil-Fired Boilers

HEIL dealers don't have that experience. They've found that the people at HEIL are genuinely interested in their problems. They know that they will get personal replies to their questions, that they will get information that they can believe and count on—not evasions or useless "rubber stamp" answers. Ask any HEIL dealer, and he'll tell you that he really "likes doing business" with the people of The Heil Co.

But more than that, HEIL dealers have sound, honest automatic heating equipment to sell. They have a full line of oil-fired and gas-fired units designed and built wholly by HEIL, and incorporating quality they can stand back of—quality that helps them hold and build their reputations. They know that a HEIL unit sold means a satisfied customer—and one that will bring in more prospects for HEIL Automatic Heat.

Yes, even in times like these you'll find that HEIL dealers are happy. They know where they stand on deliveries. They are proud of the line they sell. They *like* doing business with HEIL. Why don't you write today and get complete details about a HEIL franchise. You'll be glad you did.

THE HEIL CO.

MILWAUKEE 1, WISCONSIN

District Offices: Hillside, Washington, D. C., Atlanta, Milwaukee, Detroit, Chicago, Minneapolis, Kansas City, Dallas, Los Angeles, Seattle

HILLSIDE, NEW JERSEY

told the dealers, "Oil is just as good, is much safer, and nearly always is much cheaper for heating. You and I know it, but what we haven't done and what we must do is tell that story effectively to the public. We are faced with the first competitor in automatic heating that we, as the oilheating industry, have ever had and we must do something about it on a definite and continuing basis."

The Plan, which should be supported by every company, he continued, provides for the establishment of local committees, representing the retail sellers of fueloil and oilburning equipment in each area. Committee members select a chairman, secretary, treasurer and two committees—a finance committee, responsible for soliciting and collecting funds from local participants and an advertising committee, responsible, with the advertising agency selected, for the type and amount of publicity authorized in its area.

Beckwith then introduced Frank McCabe, FitzGerald, Inc., Providence, R. I., an advertising agency, which had participated in the survey undertaken by the Institute two years ago and which had worked out a detailed program to put the Plan into operation at the local level. McCabe explained in detail a program that consisted of these 16 points:

1. Tell the story of fueloil to increase sales and make the Boston area fueloil conscious, by instituting a program of public education and sales promotion.

2. Select a positive theme, "It's smart to have oilheat," for example, feature it in advertising and all other material possible in newspapers, radio, television, car cards, billboards, direct mail and displays.

3. Work up feature stories, news stories and photographs on oilheating for newspapers, house organs and magazines.

4. Institute a powerful newspaper advertising campaign—powerful to the point of effectiveness and not necessarily judged by the size of the advertisement—keyed to the market area, season and competition.

5. Coordinate promotion through schools, churches, clubs, hospitals, sports events and surveys.

6. Use television in a series of highly rated spots.

7. Employ outdoor posters and imprints to highlight the Plan's theme.

8. Direct mail, including inserts in monthly invoice mailings.

9. Radio spot campaigns by carefully prepared transcriptions.

10. Car card showings and supplementary distribution of window posters.

11. A powerful publicity campaign, through the medium of picture features in local papers, suggested editorial support, stories in trade journals, women's feature pages and financial pages of newspapers, correcting misinformation on fueloil prices, explaining heating systems and releases on the local oilheating industry.

12. Sales producing promotions, such as prizes for the householder with the oldest oilburner in use; portable displays for fairs, schools and churches; advice and counsel on legislative matters.

13. Good-will building extras, including school essay contests, scholar-

* 4 out of 5 warm air furnaces now being installed are forced air units . . . red-hot prospects for AMER-*glas* Filters *three times each year*. To this steady stream of new prospects, add the *4 million* forced air furnaces already installed. There are real profit opportunities in selling AMER-*glas* Filters to this high volume, high turnover market. *Are you getting your share of this business?*

LET US SHOW YOU HOW TO
MAKE MONEY WITH AMER-*glas*. . .

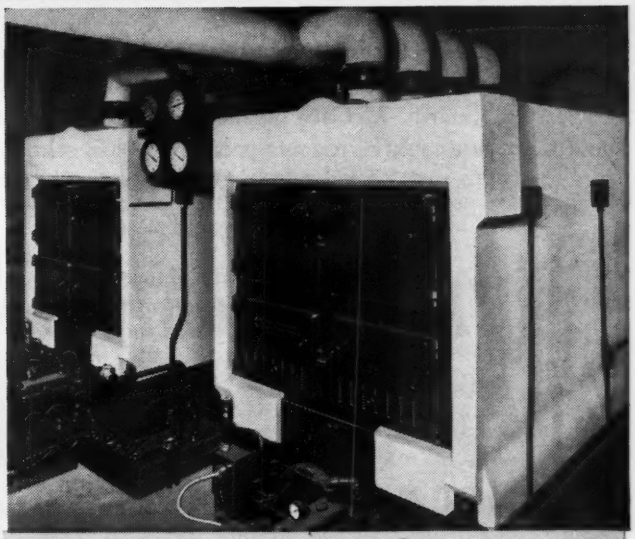
AMERICAN AIR FILTER CO., INC., 134 Central Ave., Louisville 8, Ky.
Please send me complete information on AMER-glas Replaceable Air Filters. Tell me how I can get free selling aids.
NAME
COMPANY
ADDRESS
CITY ZONE STATE
MAIL TODAY

AAF
An Engineered product of
American Air Filter
COMPANY, INC.

AMERICAN-Standard

First in heating...first in plumbing

Sixth and Denny Branch of Seattle-First National Bank. Architect: John W. Maloney, A.I.A.; Mechanical Engineer: DeWitt C. Griffin & Associates; Mechanical Contractor: Rautman Plumbing & Heating Co.; General Contractor: General Construction Co. All are Seattle firms.



A battery of two or more Redflash Boilers provides a heating plant of extreme flexibility. In cold weather the entire battery will team up to take care of the load. On mild days the fluctuating demand for heat can be efficiently handled by one of the boilers, thus effecting desirable economies in fuel.

Seattle's Most Modern Bank installs Redflash Boilers

Newest branch is fifth in large state-wide system to be heated by AMERICAN-Standard equipment

● One of the nation's fastest growing banks is the Seattle-First National. And it is one of the most progressive. Operating a state-wide system of branch offices, this great institution now ranks 24th in deposits among all banks of the country.

The attractive building shown above is the fiftieth and newest branch to be opened. Known as the Sixth and Denny Branch and located in the heart of Seattle's northern downtown business district, this modern banking building incorporates many unique banking facilities, including drive-in banking and a large parking area.

Another feature which reflects this important bank's sincere interest in the health and comfort of its customers . . . and its own personnel, is the installation of two American-Standard Redflash Boilers to insure dependable and efficient heat and operating economy. Redflash Boilers have also been installed in four other recently opened branches.

Redflash boilers provide economical heating for your commercial jobs!

Expertly engineered and sturdily constructed, the Redflash Boiler can be installed singly or in battery to provide an abundance of heat for large residences or commercial buildings of practically any size. Its scientifically proportioned combustion chamber, direct heating surface, and long flue travel for hot gases assure highest heat output with the least fuel. The Redflash Boiler and other large fired heating units in the American-Standard line are sold through selected wholesale distributors to heating and plumbing contractors.

Easy to Install...

Redflash Boilers are shipped in sections, so that even the largest size is easily moved through a door or elevator hatch. Can be assembled quickly without tearing down walls or shifting heavy equipment.

American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pa.

Serving home and industry

AMERICAN-STANDARD · AMERICAN BLOWER · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · ROSS HEATER · TONAWANDA IRON

ships, forum radio broadcasts, clearing house for fueloil information.

14. Statewide or regional oilheating dealers mass convention, sales clinic and banquet.

15. Comprehensive program for architects, contractors and heating engineers.

16. Route sales contests on new equipment or supplementary services.

As these points were introduced by a series of placards, McCabe detailed how each phase could be put into practice and explained how the industry collectively and individually could participate in the Plan "designed to make the greatest impact on your potential, engineered through a consistent, efficient, thorough program for a fraction of a penny per gallon."

Mr. Beckwith then explained that actual operation of the Plan was dependent upon every company paying its proportionate share. This, he explained, could take the form of a straight assessment of $1 for each oilburner sold, 1/20th or 1/10th of a cent for each gallon of fueloil delivered, a flat fee per company or any method agreed upon. "The job is yours," he concluded. "It's your business you're working to save and the effort is going to cost you money. Not too much, though, when everyone backing the program contributes his share."

Resuming its business session, the Massachusetts Oil Heating Association then unanimously authorized active support of the program. Another motion resulted in the appointment of a three-man committee, consisting of Mr. Beckwith, John Scott, Buckley & Scott Utilities, and A. G. Dwelley, Massachusetts Heating Corp. The committee was charged with the task of contacting other local groups in the Boston area, concerned with competition from natural gas, and reporting their reactions to the Plan at the November meeting of MOHA.

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U. S. Department of Labor Fueloil Prices (August)

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken August 15 (cents per gallon):

	Range	No. 1	No. 2	No. 3
Boston	14.90	14.57	12.50	..
Manchester	15.30	14.80	13.20	..
[1] Portland, Me.	14.40	14.40	12.40	..
[3] Buffalo	14.95	..	13.74	13.74
[4] New York	..	..	12.75	..
Philadelphia	..	13.43	12.20	..
[1] Chicago	14.83	14.48	13.57	13.57
[4] Detroit	..	14.73	13.70	..
Milwaukee	..	14.78	13.84	13.72
[1] Baltimore	..	13.36	12.44	..
[1] Wash., D. C.	..	13.84	12.85	..
Jacksonville	..	14.87	13.60	..
Norfolk	..	13.60	12.20	12.20
Richmond	..	14.00	12.60	..
[2] Savannah	..	16.55	13.97	..
[5] New Orleans	..	14.33	12.77	12.77
Portland, Ore.	..	14.50	12.10	6.90
[6] San Francisco	..	13.87	11.54	6.85
[4] Seattle	..	15.41	13.20	7.11

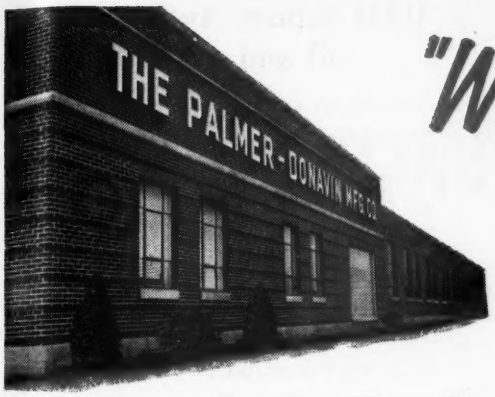
[1] Prices include 2 percent tax.
[2] Prices include 3 percent tax on all fuels plus an inspection tax of one cent per gallon on kerosene only.
[3] Prices include 1 percent tax.
[4] Prices include 3 percent tax.
[5] Prices include 3 percent tax on all fuels except gas; prices for kerosene and fueloil No. 1 also include one cent per gallon State health tax, and 1/32 of one cent per gallon State inspection tax.
[6] Prices include 3.5 percent tax on all fuels except gas.

There is only ONE
TRADE MARK REGISTERED
Draft-O-Stat
BAROMETRIC DRAFT CONTROL
AND HOTSTREAM MAKES IT!

OVER ONE MILLION
SUCCESSFUL INSTALLATIONS

New Model "B" (illustrated) now available in 6, 7, 8, 9, 10 and 12 inch sizes. Write for Bulletin.

THE HOTSTREAM HEATER CO.
6925 QUINCY AVENUE • CLEVELAND 4, OHIO



"What's in a name? Plenty ...if it's NORGE HEAT!"

R. J. WOODWARD
SECRETARY, THE PALMER-DONAVIN MFG. COMPANY

Yes . . . the name "Norge Heat" means a whale of a lot to us of the Palmer-Donavin Mfg. Company. And it can mean plenty to *you* as a dealer.

We became a distributor of Norge Heat products about six years ago, largely because we knew of their wide public acceptance. Since that time, we have found that our association with Norge Heat also holds these and other important advantages.

The Norge Heat line is tops for completeness! It offers all types of heating equipment for all types of fuels—oil, gas and coal. As a result, we can furnish our dealers with the right unit for every heating need.

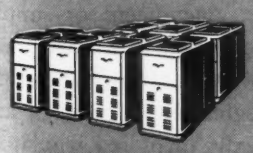
Norge Heat prices are highly competitive—and mighty attractive to buyers. Also, Norge Heat makes available hard-hitting advertising material—newspaper mats, radio spots, etc. This combination packs plenty of sales appeal.

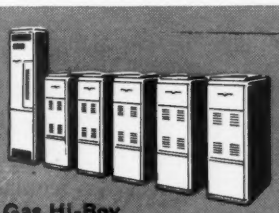
Norge Heat people are extremely co-operative. They stand ready to help us and our dealers with any sales or service problems which might arise.

The name "Norge Heat" is backed by Borg-Warner Corporation. Just one more reason why you and other Ohio dealers can expect to get the best in heating equipment and accessories from us, regardless of the size of your organizations.

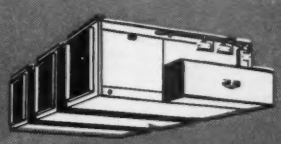
In addition to Norge Heat products the Palmer-Donavin Mfg. Co. also handles a complete line of allied building products and accessories. With warehouses located in Columbus and Lima we are ready to serve you in all adjacent Ohio areas. Please phone us or drop us a line and we will be glad to tell you how the Norge Heat name can mean plenty to you, too!

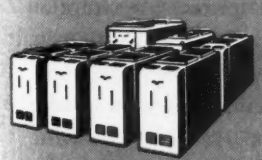
Buying, Selling or Installing . . . "Living's a Treat with Norge Heat"

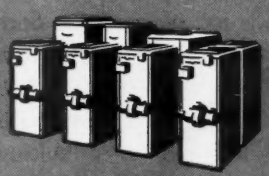

Gas Lo-Boy
7 Models 80—170 M/Btu

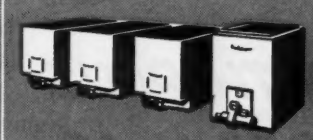

Gas Hi-Boy
6 Models 62.5—120 M/Btu

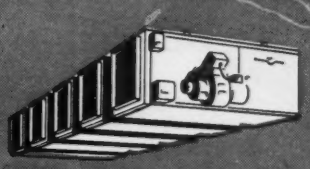
Gas Gravity
3 Models 80—120 M/Btu

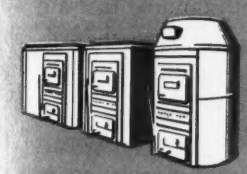

Gas Suspended
3 Models 60—100 M/Btu

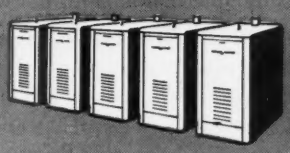

Oil Lo-Boy
7 Models 80—180 M/Btu

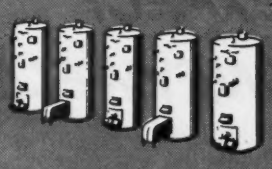

Oil Hi-Boy
8 Models 60—180 M/Btu

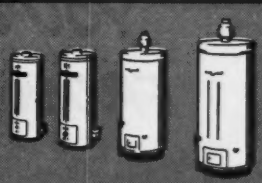

Oil Gravity
4 Models 54—100 M/Btu

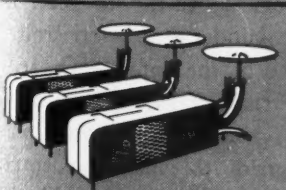

Oil Suspended
5 Models 80—180 M/Btu

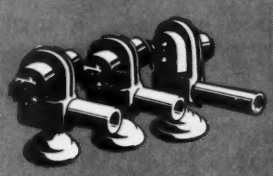

Coal Gravity and W.A.C.S.
12 Models 20-27" Dia.


Oil and Gas Square Boilers
18 Models to 1440 Sq. Ft.


Oil and Gas Round Boilers
12 Models to 880 Sq. Ft.


Gas and Oil Water Heaters
13 Models 20—66 Gal.


Conversion Gas Burners
7 Models 50—300 M/Btu


Conversion Oil Burners
8 Models .2—6.0 gph.

THE PALMER-DONAVIN MFG. CO.
575 OLENTANGY RIVER ROAD, COLUMBUS 8, OHIO
DISTRIBUTORS OF NORGE HEAT PRODUCTS, REGISTERS, FITTINGS AND ACCESSORIES

PAD defines Authority on oil and gas Deliveries

PAD REGULATION NO. 1, issued by the Petroleum Authority for Defense, defines its authority to require, forbid or otherwise provide for the delivery of petroleum or gas. Under the Regulation, PAD can issue directives to require adjustments in the distribution of petroleum, petroleum products, gas and other material under the jurisdiction of PAD needed to promote the defense effort.

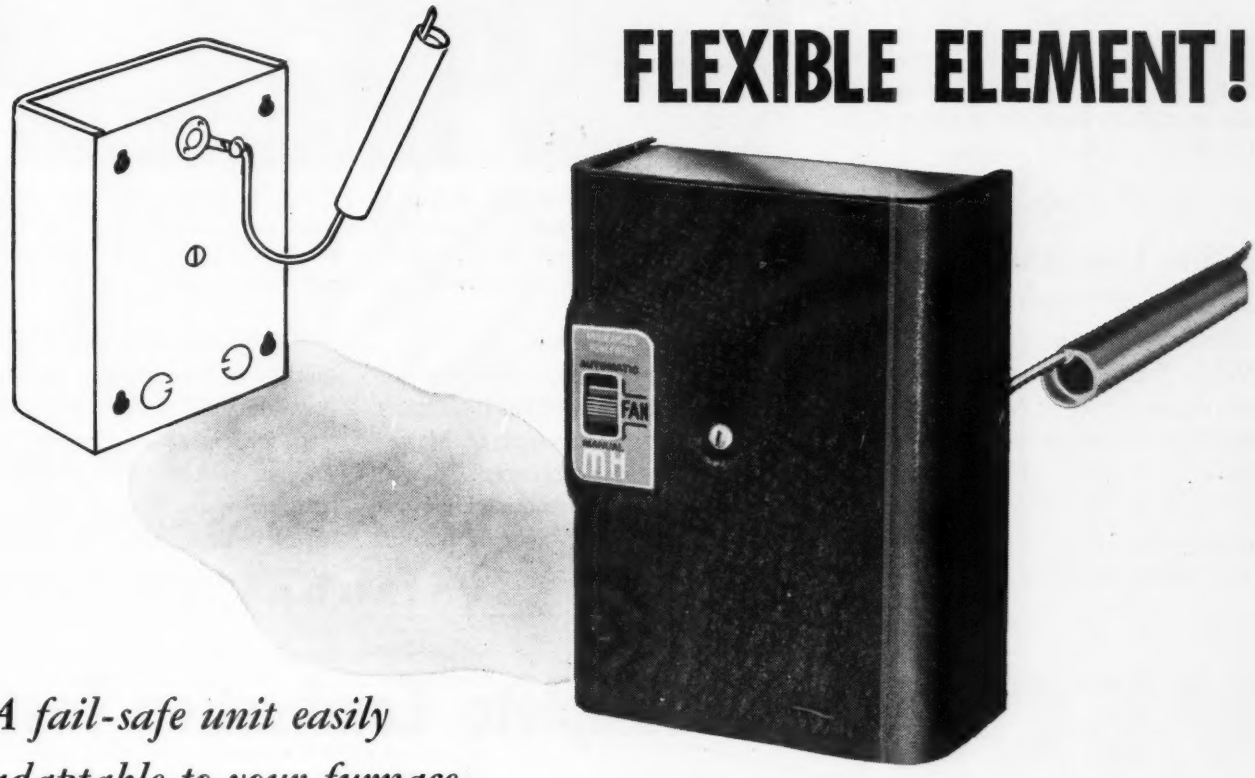
Section 3 of the Regulation reads: "The Petroleum Administration for Defense may, from time to time, issue directives requiring, forbidding or otherwise providing for the receipt or use of petroleum or other products by any person or persons or the delivery of petroleum or other products to any person or persons. Where a directive, or an amendment or supplement thereto, is issued, it shall take precedence over the provisions of any general order, regulation, direction, or other action of the Petroleum Administration for Defense, over the provisions of any contract to which any person, to whom the directive, amendment or supplement is issued, may be a party, and over the provisions of any rate schedule, tariff, regulation or order of any regulatory body, including regulatory bodies of the several States and Territories."

Section 4 provides exemption for any person from damages or penalties for default under any contract, rate schedule, tariff, regulation or order resulting from compliance with the Regulation, amendments or supplements thereto, so long as it remains in force, "notwithstanding that any such directive, or any part thereof, shall hereafter be declared invalid by judicial or other competent authority."

Violators of any provisions of the Regulation, upon conviction may be fined or imprisoned and may be "prohibited from delivering or receiving any material under priority controls."

Secretary of the Interior Oscar L. Chapman has revealed the first directive to be issued under Regulation 1 was designed to insure adequate supplies of fuel for the Navy during the 4th quarter of 1951 by directing 4

NEW! HONEYWELL COMBINATION CONTROL WITH "OUT-OF-BACK" FLEXIBLE ELEMENT!



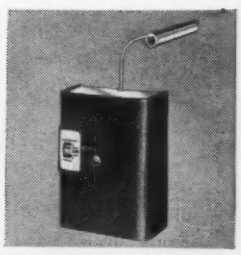
A fail-safe unit easily adaptable to your furnace

The single flexible element comes right out the back of this new control. Permits standardized mounting now for all makes of "out-of-back" flexible element controls. No leveling required!

Has exclusive fail-safe feature! If the element should ever rupture for any reason the high limit switch "breaks," shutting down the burner. Simultaneously, the fan switch "makes," turning on the fan motor. This insures *positive* furnace protection—an exclusive Honeywell feature. Thermostatically compensated for ambient temperature changes so switching action is sure and uniform.

Easily accessible summer-winter switch and many other features are additional good reasons why you should use this better, safer control. For all the facts, call your local Minneapolis-Honeywell office. Or write Honeywell, Dept. FH-11-181, Minneapolis 8, Minnesota.

"Out-of-Top" Model Also Available



In this model the single flexible element comes right out of the top, permitting surface mounting without the use of spacers. Easy to install—no leveling required. Has fail-safe features described in unit above. When ordering specify model desired.

MINNEAPOLIS **Honeywell**

H HONEYWELL

First in Controls

companies to supply 2,100,000 gals. of Navy Special Fuel during October, November and December and by directing 14 companies to supply on a pro-rate basis Grade C fueloil to the primary suppliers to make up deficits caused by the diversion of production to Navy Special Fuel.

Deputy Petroleum Administrator Bruce K. Brown attributes the shortage of Navy Special Fuel to the general scarcity of residual fueloil in the United States, increases in residual fuel requirements by industry and marine transportation and the shutdown of the Abadan refinery in Iran.

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White Fuel dedicates expanded Facilities

DEDICATION CEREMONIES were held by White Fuel Corp. on October 17 to mark completion of expanded storage facilities at the company's South Boston pier. A hundred guests attended a luncheon that preceded the ceremonies and when the brief dedication was ended, they were taken on a boat tour of Boston harbor.

John Birmingham, *president, White Fuel Corp., Boston, opens valve to start flow of oil to new storage tanks. Shown left to right are: Governor's Councillor Sunny McDonough, Governor Paul A. Dever of Massachusetts, Mr. Birmingham and Governor's Councillor Twomey.*

John Birmingham, president of White Fuel, introduced His Excellency Paul A. Dever, Governor of Massachusetts, and Corporation Counsel William Baxter, representing His Honor John B. Hynes, Mayor of Boston. Both spoke briefly.

Completion of the new storage facilities at the terminal represents an investment of more than 2 million dollars and increases capacity from 23 million gallons to 65 million gallons, making it the largest cargo terminal in New England for the sale and distribution of petroleum products. Fa-

VECO TROUBLE FREE Complete Combustion Testing

New-Revolutionary

CO_2 Analyzing Elements

(Sealed in Glass)

SINGLE METER — All readings on one dial Constant accuracy in service use.

3 IN 1 OPERATION

CO_2 INDICATOR
STACK THERMOMETER
DRAFT GAUGE

COMPACT PORTABLE Weighs only 7 pounds

REPRESENTATIVE—VECO has set up factory representation in many cities, but certain excellent areas are still open for qualified persons. Write us for full details.

Victory ENGINEERING CORPORATION
744 Broad Street, Newark, New Jersey
"MANUFACTURERS OF THERMALLY SENSITIVE RESISTORS"

PECORA
BRAND

ASBESTOS
Retort Cement

Sets A Standard of Excellence For The Heating Industry

Here is a cement, developed by Pecora, to specifically meet the exacting requirements of installations that must cope with wide temperature extremes... a practically indestructible binding material that is absolutely fire-proof... resistant to acids and corrosion... burns hard without cracking and is completely odorless... non-porous and not subject to air leakage. Pecora Asbestos Retort Cement is the ideal material for mounting furnaces, heaters, stoves... for cementing joints exposed to intense heat. Iron will melt where this cement will stand!

A Superior Product Designed For Superior Workmanship

PECORA
PAINT COMPANY, INC.

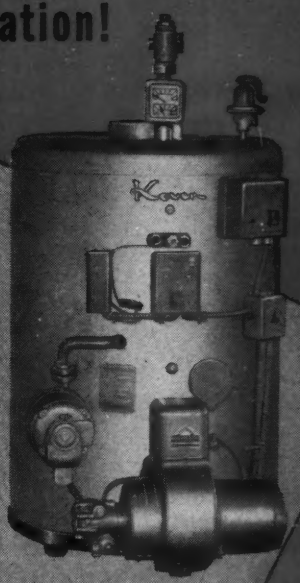
ALSO: PECORA FURNACE CEMENT
A heat-resistant cement for sealing or joining of parts subjected to high temperatures.

PECORA Fibroid STOVE PUTTY
A durable, dependable sealing compound that will maintain an air-tight seal despite vibration.

315 SEDGLEY AVE., PHILADELPHIA 40, PA.
Manufacturers of Caulking Compounds, Roof Coatings, Maintenance Finishes, Industrial Enamels
SPECIFY PECORA AND YOU SPECIFY QUALITY

complete for
QUICK installation!

the TUCK-AWAY Boiler



the
venko
packaged unit
for small homes
by
Koven

Sturdily constructed, dependable and trouble-free, the Venko Packaged Unit is the answer to low cost heating for your small home installations.

Installation is quick . . . easy, because the boiler is completely assembled at the factory . . . ready to operate. No waiting for missing parts . . . less cost for labor.

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cilities today permit the discharge of 1 million gallons of product per hour from tankers and 1,075,000 gallons per hour loading capacity through trucks, barges and consumer pipelines. The company operates 100 trucks and from its terminal flows 26% of fueloil consumed in a 50-mile radius of Boston, representing 200,000 families and hundreds of industrial and commercial users.

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Hilts accents Economy of fueloil for Heating

IN A RECENT STATEMENT, Harry B. Hilts, executive trustee of the Fuel Oil Foundation, New York 17, N. Y., pointed out that oilheating is more economical than ever today, declaring that while the price of many commodities has increased by well over 100 percent since 1940, the price of domestic fueloil has advanced only 78 percent.

Citing latest Bureau of Labor Statistics, Hilts accented the comparatively moderate rise in fueloil prices when it is realized that coffee has gone up 281%; butter, 127%; round steak, 221% and the index base for all food, 131%.

"Furthermore," he continued, "on a per dollar cost for heat furnished, fueloil is substantially cheaper to use in more areas in the Middle Atlantic States than any other fuel. Three other facts make oilheating far more thrifty and satisfactory today than ever. The first is the fact that the petroleum industry through constant research has improved the quality of fueloil. Second, oilburner efficiency has been improved by engineering advances. Third, fueloil dealers have educated a large percentage of families to have their oilburners adjusted and serviced regularly to assure the most efficient year 'round operation."

❖

NPA announces third, fourth Quarter Allocations

THE NATIONAL PRODUCTION AUTHORITY has announced allocations of controlled materials for the oilburner industry for the third and fourth quarters, including materials allocated for the entire industry—domestic, commercial and industrial oilburner manufacturers and producers of oilburner parts and attachments.

The allocations announced were:

	Third Quarter	Fourth Quarter
Carbon steel ..	3,660 tons	1,728 tons
Alloy steel ...	270 tons	226 tons
Stainless steel .	437,042 lbs.	228,985 lbs.
Copper and copper base alloy brass mill products ...	555,230 lbs.	235,050 lbs.
Copper wire mill products for electrical conduction only ..	127,989 lbs.	45,000 lbs.
Copper and copper base alloy foundry products and powder	140,768 lbs.	84,950 lbs.
Aluminum ...	746,571 lbs.	606,709 lbs.

In establishing the quota for any industry, NPA takes into account all known factors and influences. From the Census Bureau reports the officials could see that factory stocks of oilburners at the end of June were up 55% from the previous year, while it

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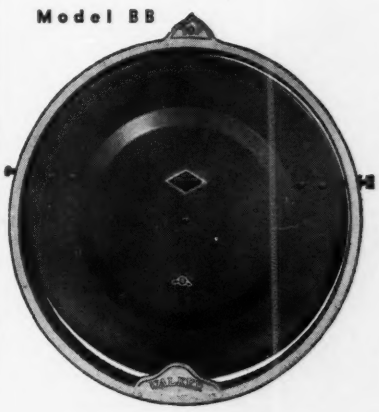

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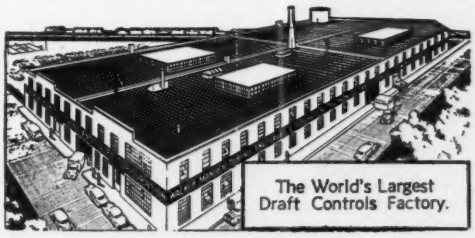

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was known that installations were running 20% below last year. Also from the Census reports they could see that factory shipments in the fourth quarter of the average postwar year were 13% below the third quarter.

Again, the lack of requests from manufacturers for supplementary allotments had considerable influence. Up to the start of the fourth quarter only eight oilburner manufacturers had asked for additional materials—four domestic and four commercial burner plants. In each instance some additional material was allocated.

These things will be considered in the later schedules of allocations in all probability. Any burner manufacturer having serious trouble getting materials to fill actual orders should ask for a supplementary allotment immediately after getting his original allocation, giving the fullest particulars. The request should go to the Heating Branch, Building Materials Div., National Production Authority, Washington 25, D. C.

❖

OPS spells-out fueloil Prices in New England

THE OCTOBER 4 BULLETIN of the Oil-Heat Institute of New England, Boston, Mass., informs its members of light fueloil prices that the Office of Price Stabilization has "spelled out" in Massachusetts and Rhode Island. The OPS has been working on the project, in accordance with the pricing provisions of Ceiling Price Regulation 17, to establish tank wagon delivery prices of No. 1 and No. 2 fueloils and the Boston Regional Office has approved prices for the Greater Boston area, as follows:

Delivered in Tank Wagons	*Range Oil No. 1 fuel-oil and Kerosene*	*Nos. 2, 3, 4 Fueloils*
100 gals. or more (subject to such quantity discounts established during the base period) .	*14.6*	*12.6*
Less than 100 gals.—hose delivered . . .	*15.6*	..
Carried in cans	*18.1*	..

In addition to Boston and 13 suburban areas, 38 other towns are included in the Greater Boston Area. In areas where there has been an increase in transportation rates since the base

period and the increase totals 0.05¢ or more, the spelled-out ceiling prices have been adjusted to the nearest 0.10¢ per gallon. In areas where there has been no change in transportation costs, the increased allowance has not been added.

Prices also have been spelled-out on the same basis for an additional 322 towns and cities in Massachusetts, outside the Greater Boston area and for a total of 39 towns and cities in Rhode Island.

The ceiling prices provide that for deliveries in Massachusetts of more than 100 gals. of range oil, kerosene or No. 1 fueloil, the seller shall deduct his customary price differentials. For deliveries of less than 50 gals. he may add his customary price differential, not to exceed 1¢ per gal. for hose deliveries of less than 25 gals. and 2¢ per gal. for can deliveries of less than 25 gals.

In Rhode Island sellers may add customary price differentials for deliveries of less than 25 gals. of range oil, kerosene or No. 1 fueloil, not to exceed 1¢ per gal. and on deliveries of 100 gals. or more the seller deducts his customary price differential.

In both states where a seller has established a customary addition to his price for oil in payment for specified oilburner service, this addition may be made to the prices, but the service must be maintained.

The Regional Office of OPS is accumulating data to compute spelled-out prices in New Hampshire and Connecticut and will start collecting the data shortly in the state of Maine.

❖

Philadelphia Code requires permanent heating Systems

MORE STRINGENT REGULATIONS for heating systems in multiple occupancy dwellings are included in the formal fire code adopted last September by the Philadelphia City Council. It provides that all such dwellings must have permanent heating systems and does not permit the use of movable coal or oil stoves in multiple dwellings.

The code was drafted under the terms of the new Philadelphia City Charter and provides for fines up to

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Survey Northwest buying Intentions

A SURVEY conducted by the *Pacific Northwest Farm Quad,* Spokane, Wash., made up of four semi-monthly farm papers in Washington, Oregon, Idaho and Utah, was made early this year to determine "What's being bought in 1951." Included in the questionnaire, circulated and tabulated on a proportionate basis among a representative sample of the farm families located in the area, were questions seeking to determine how many and what makes of furnaces and oilfired space heaters would be bought.

A total of 210,832 farm families are located in the four states, 79,887 in Washington; 63,125 in Oregon; 41,498 in Idaho and 26,322 in Utah. Of the total, 10,092 families indicated they intended to buy furnaces this year and 7,661 plan to purchase oil heaters. A breakdown by states follows:

	No. of buyers	Percent of total	No. with brand Preference	Percent*
FURNACES				
Washington	3,355	4.2	1,053	31.4
Oregon	1,641	2.6	722	44.0
Idaho	2,780	6.7	992	35.7
Utah	2,316	8.8	595	25.7
Total	10,092	4.8	3,362	33.3
OILHEATERS				
Washington	3,515	4.4	1,856	52.8
Oregon	1,894	3.0	1,307	69.0
Idaho	1,120	2.7	791	70.6
Utah	1,132	4.3	67	5.9
Total	7,661	3.6	4,021	52.5

**Percent of farms with brand preferences.*

Another category in the questionnaire, "Petroleum Products," elicited the information that an indicated total of 61,074 families in the four states would consume this year an average of 36.4 gals. each of kerosene, for a total of 2,224,140 gallons. Stove oil purchases will be made by 87,151 families, each using 654 gals., or a total consumption of 57,019,599 gals.

❖

Ralston B. Reid, Schenectady, N. Y., has been appointed an assistant manager of the advertising and sales promotion department of General Electric's Apparatus Marketing Div. He had been manager of industrial advertising for the department since 1931 and served G-E in news, editorial and advertising capacities for the past 21 years.

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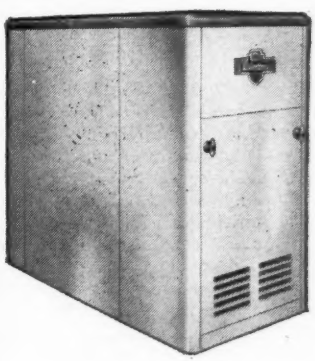

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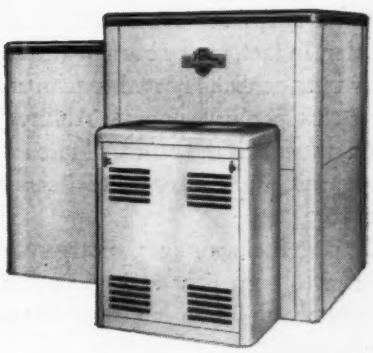

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Metering Oil to Rotaries

Varying oil Temperatures should not affect firing Rates

by
C. A. Louderback*

Because understanding the viscosity problem depends on this, the author of this article explains the temperature-viscosity properties of fueloil before discussing the problem of controlling accurately the gph firing rates of horizontal rotary burners. The result is a splendid correlation of on-the-job oilburner performance to laboratory oil testing.

This sentence from the article should long be remembered: "Ability to pump the fuel is the principal factor in determining how heavy a fuel can be burned." It refers to horizontal rotary burners.

Experts, comparing their experiences and opinions with the author's, can sink their teeth into his advice regarding the proper heating of Nos. 5 and 6 oils. Though there are exceptional jobs, he indicates, usually you should heat the oil enough to reduce its viscosity to 150 S.S.F. You heat No. 6 oil, for example, enough to produce this desired viscosity, and that is different from heating it sufficiently to produce some certain oil temperature.

Whether or not you agree with the author in his enthusiasm for the positive-displacement method for regulating gph firing rates, you should enjoy this technical-minded presentation of his arguments. Although it has gained in popularity, the positive-displacement method is not the only method used to meter oil in horizontal rotary cup burners. There are experts who express admiration for some other metering systems.

ONE OF THE MOST DISCUSSED SUBJECTS which has long concerned rotary oilburner manufacturers, dealers, and users is that of providing means of compensating for changes in viscosity of heavy fueloils due to changes in oil temperature.

Is this a problem and if so, what are the answers? Some preliminary considerations are necessary before we answer this question.

First: Rotary oilburners are probably the most versatile burners, being used to burn all grades of fueloil from Number 2 to Number 6 C.S.G. and heavier. In fact, rotary burners successfully burn asphalts heated to temperatures that permit pumping. Ability to pump the fuel is the principal factor in determining how heavy a fuel can be burned.

In past fuel shortages, rotary burners had to burn light and heavy fuels alternately and with minimum burner readjustment.

To delve into the viscosity compensation problem, it is necessary to study the characteristics of fueloils.

Viscosity is generally defined as a measure of the internal resistance a liquid offers against flow. It may be also regarded as a measure of the ease with which a liquid will flow. High viscosity means a "thicker" liquid and slower flow, while low viscosity indicates a "thinner" liquid and faster flow. If the flow is to be maintained constant, a higher viscosity oil requires a higher pressure to cause a given flow through a given size pipe than that required by a low viscosity oil for the same rate of flow and pipe size.

Viscosity is determined in the laboratory by a viscosimeter. The Saybolt Viscosimeter, commonly used in the United States, consists of an internal vertical cylinder containing the oil sample, surrounded by a hot oil bath to maintain the oil sample at the test temperature. The time, in seconds, is noted for 60 cubic centimeters (approximately 1/8 pint) to pass through a definite size orifice in the bottom of the sample cylinder. A small orifice is used for light oils and the viscosity is expressed as seconds Saybolt Universal (SSU); a larger orifice is used for heavy oil and the viscosity is expressed as seconds Saybolt Furol (SSF). The time in seconds on the Universal scale is approximately ten times the Furol scale.

The American Society for Testing Materials (ASTM) recommends certain definite test temperatures for viscosity readings. These are 70, 100, 130 and 210 degrees F. for Saybolt Universal and 77, 100, 122 and 210 degrees F. for Saybolt Furol. Several readings are necessary for a curve to be drawn on the temperature-viscosity chart similar to Figure 1. This gives us a picture of an oil's viscosity characteristics.

Figure 1 shows the viscosity limits of fueloils in accordance with the Commercial Standards Specifications, No. CS12-48 for fueloils.

No. 6 C.S.G. oil may have a viscosity, at 122° F., of from 50 S.S.F. to 300 S.S.F. The maximum viscosity of No. 2 C.S.G. oil is specified as 45 S.S.U. at 100° F. By way of comparison, the viscosity of water is approximately 32 S.S.U. at 60° F. while SAE 30 motor oil ranges from 185 to 225 S.S.U. at 130° F.

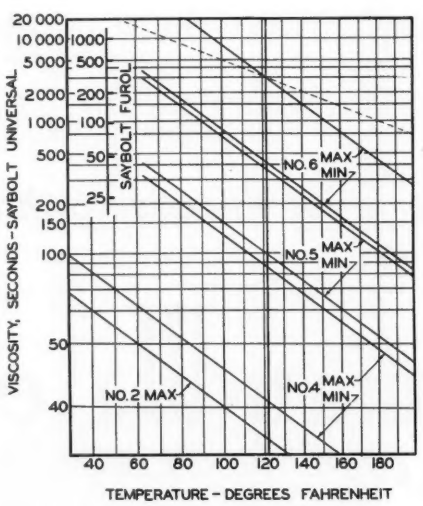

Fig. 1. *Viscosity-temperature curves of fueloil.*

The curves in Figure 1 have slopes which are typical for California fueloils. Oils from other localities may have different slopes. The slope is important since it tells how rapidly the viscosity changes with temperature. This characteristic of an oil is termed its viscosity index and is determined only by taking viscosity readings at different temperatures. This point is emphasized because all oils of the same C.S.G. number do not have the same viscosity index. As an example, two oils may both have a viscosity of 300 S.S.F. at 122° F., yet one may have a viscosity of 150 S.S.F. at 140° F. (as in Fig. 1) while the other may have a viscosity of 150 S.S.F. at 157° F. Both satisfy the specifications for No. 6 C.S.G. oil, but do not have the same viscosity index. This indicates the importance of considering the viscosity requirements, instead of arbitrarily

*Engineer, Enterprise Engine & Machinery Co., Div. of General Metals Corp.

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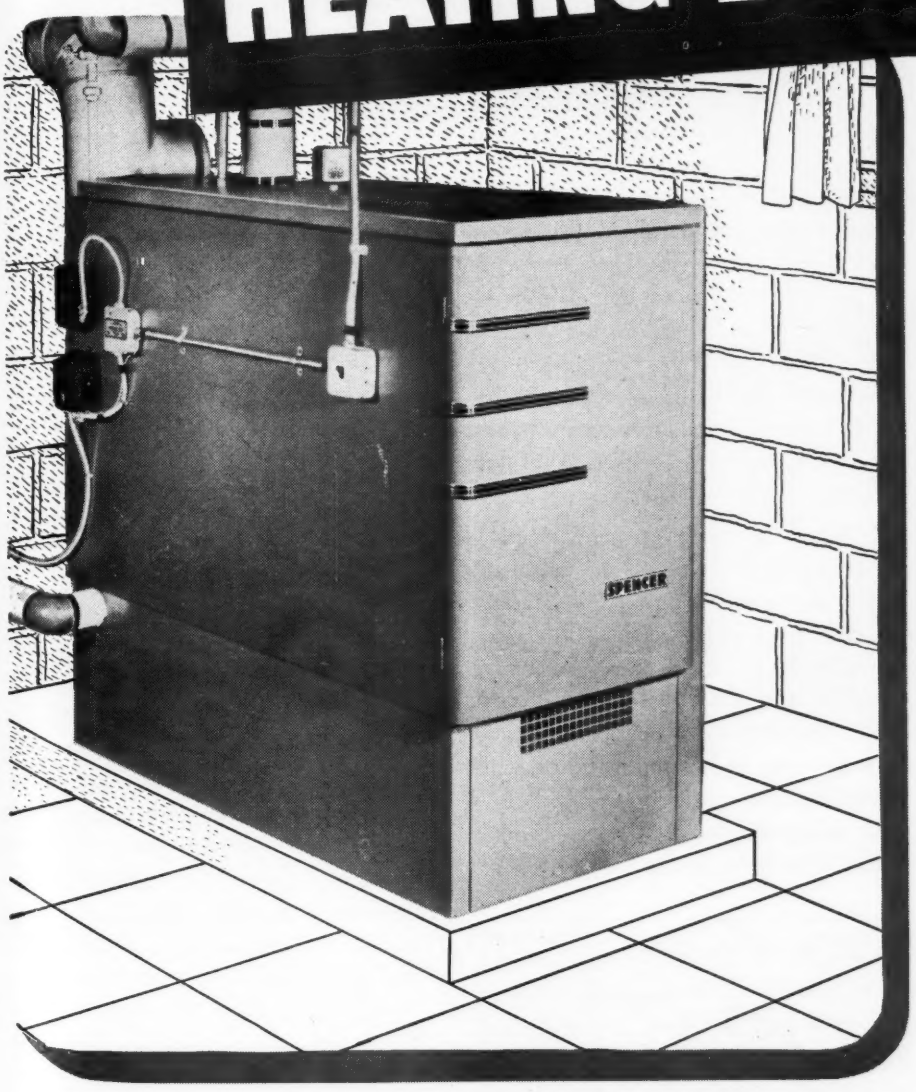

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stating a general heating temperature for No. 6 oil.

Figure 1 shows that heavy oils, No.'s 5 and 6, change viscosity much greater for a given temperature change than do the lighter oils. This is important. Another point is that viscosity should always be specified at a certain particular temperature.

Rotary burners burn oils at higher viscosities than other types of burners; it follows that oil requires less heating for this type burner.

A viscosity of 150 S.S.F. (equivalent to 1500 S.S.U.) is a good average value to insure easy pumping and good atomization in rotary burners. In some cases higher viscosity may be permitted or lower viscosity required, but this value satisfies for most installations. If we obtain a viscosity temperature plotting for any oil, it is simple to select the proper temperature to which the oil must be heated to give a viscosity of 150 S.S.F. This information can often be obtained from the oil supplier.

The foregoing discussion of the characteristics of fueloil furnishes a basis for considering its action in rotary oilburner systems.

One common method of regulating oil flow to the cup of rotary burners is to maintain a pressure in the return line, against the oil regulating valve on the burner. This regulating valve, in general, has some form of orifice to provide metering. This system is satisfactory when using the light grades of unheated fueloils but to my opinion is very unreliable on heavy fueloil requiring preheating.

We have seen how the viscosity of heavy oils changes rapidly with small changes in temperature. With a given setting of the regulating valve, a change in temperature will cause a change in the oil flow through the valve, since the pressure is maintained constant. Lower temperature increases the viscosity, thereby decreasing the oil flow, while higher temperature will increase the oil flow. In the typical installation, temperature variations of 10 degrees F. can be expected. The effect of such a variation was recently demonstrated in a burner test where an oil temperature increase from 59° F. to 70° F. caused the oil flow to increase from 23 gallons per hour to 36 gallons per hour, the pressure remaining constant. This test proved that continual valve readjustment was necessary to maintain a constant oil flow to the atomizing cup.

When speaking of maintaining a constant flow of oil to the atomizing cup we mean, of course, a constant flow for a given setting of the oil regulating valve. In the case of a manual burner, the oil regulating valve is set by the boiler room operator while in the case of an automatic or semi-automatic, its position is controlled by an automatic device. The most widely used automatic device is a control motor for either two position or modulating firing, activated by a temperature or pressure control.

Since the regulating valve is generally interconnected, by linkage, to primary and secondary air draft dampers, any given position of the regulating device should always deliver the same quantity of oil to the burner. Any deviation from this requirement will affect the air-oil ratio, resulting in inefficient combustion. The rising interest in efficiency of boilers, large and small, emphasizes this point.

Failure to deliver the required quantity of oil to the burners obviously results in loss of load on industrial as well as heating installations. Such a loss of load in many cases results in serious financial losses to the owner and condemnation of the burners.

Viscosity Compensators

Various types of viscosity compensation devices have been used, but I find that each has possessed some limitation. Some require higher oil pressure, have only a limited viscosity range without readjustment, or require special skill in making adjustments. Many have some objectionable feature. Rotary burners are inherently low pressure oilburners and this is a desirable feature, which should be retained, if possible. Present-day variations, sometimes related to emergencies, may require the user to accept either lighter or heavier oils as conditions dictate. In such cases, constant adjustment of valves is objectionable. In the case of fully automatic burners, failure to readjust at once results in periods of inefficient operation.

The gear pump in a rotary burner is generally sized to deliver at least 150 per cent of burner gph capacity. This insures ample oil for firing, and a surplus to return to the storage tank. The return line circulation is necessary in heavy oil systems requiring oil heaters, because it maintains a circulation of heated oil throughout the system.

An extremely accurate and dependable method to insure a constant volume of oil to the atomizing cup is to provide a separate positive displacement pump functioning to deliver only the oil required by the cup and to

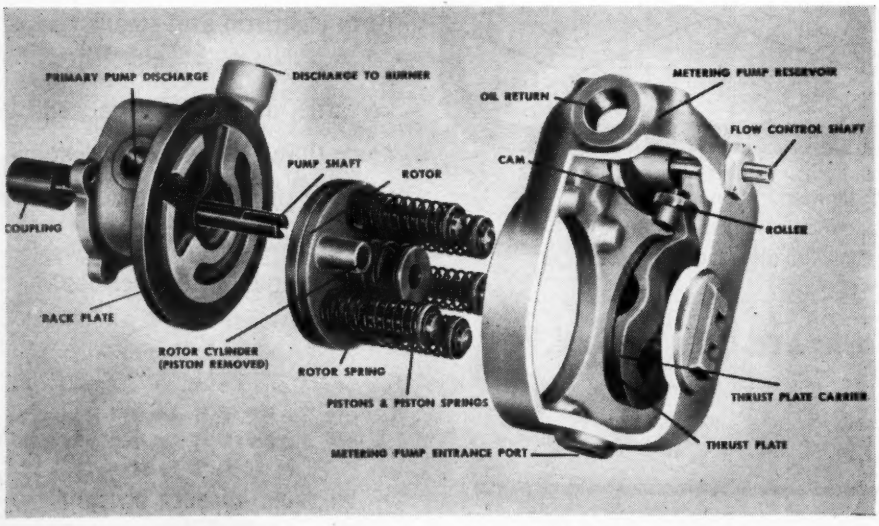

Fig. 2. *Exploded view of the Enterprise positive displacement type metering pump.*

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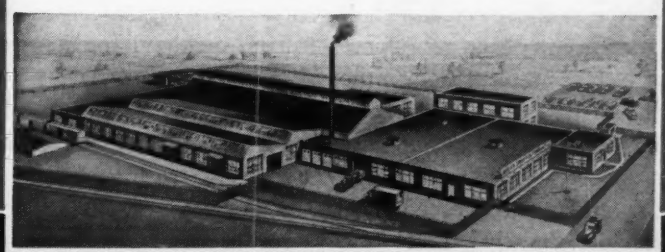

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provide a means of altering the displacement to match the firing requirements of the burner.

This type of pump has long been used in many types of applications. In Enterprise's preliminary stages of applying this form of pump to oilburner metering, Enterprise produced several test pumps and installed them throughout the country where troubles were reported due to viscosity variations.

After this preliminary work, the Enterprise metering pumps were designed, embodying many features beyond those of mere metering devices.

How the Pump Works

The unit consisting of reservoir, primary gear pump and metering (secondary) pump is shown in Figure 2.

A single shaft drives both the primary and metering pump. The primary gear pump draws oil from the storage tank and delivering it either directly to the metering pump reservoir or out through the burner hinge to either a steam or hot water type oil heater, then back to the reservoir. Either arrangement minimizes the work done by the primary pump because only low pressures are used throughout the system. There are no small-orifice metering valves. There is no valve that builds up oil pressure.

If we were to regularly dip a measure into the oil reservoir and pour the oil into the line to the atomizing cup, we would be feeding the burner with a constant volume of oil, regardless of the condition of the oil, either high or low viscosity. It is the principle employed in the Enterprise pump.

The measuring buckets are the piston cavities in the rotor, which is mounted on one end of the gear pump shaft. The pistons are kept against the inclined thrust plate. Both pistons and thrust plate are hardened to minimize wear. As the rotor starts to turn, the piston at the bottom is entered fully into its cylinder. In a half revolution upward, the piston is partially withdrawn from the cylinder, due to the action of the piston spring in forcing the piston head to bear always against the inclined thrust plate.

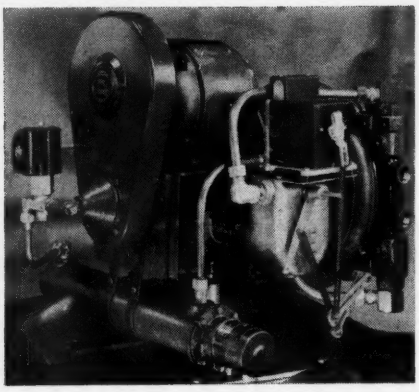

Fig. 3. *Enterprise automatic burner with metering pump. Burner has a capacity of 50 gph of No. 6 fueloil.*

Since the cylinder is open to the oil in the reservoir, it fills with a definite quantity of oil. On the next half revolution, due to the inclined thrust plate, the piston is forced down into the cylinder, expelling the oil into a cavity leading to the burner feed line. This cavity is sealed from the oil in the reservoir by means of the closely ground surfaces of the rotor and the pump back plate upon which it rides. The minimum of six pistons provides a smooth flow to the atomizing cup.

For regulating the flow of oil to the cup, a cam mechanism is provided to change the angle of incline of the thrust plate. This changes the stroke of the pistons. The camshaft extends outside of the reservoir so any type of lever control mechanism can be used to regulate the flow. The cam angle provides an increase of oil flow from shut-off to maximum in direct proportion to the angular movement of the camshaft.

Suitable linkage is furnished so that regulation of the oil flow will cause a corresponding regulation of both primary and secondary air. The metering pump can be fitted with a modulating or two position control motor, or a hand quadrant for manual control.

Single type metering pumps, without primary gear pumps, insure constant flow in a multiple burner system supplied by a separate pump set. In such cases, low oil pressures are used, because the metering pumps do not depend on oil pressure in the supply line and reservoir. The lowest possible circulating pressure is most desirable. Fluctuations in firing rate, due to cutting burners in or out, are eliminated.

The primary pump only raises the oil from the supply tank and develops only the very low pressure necessary to return excess oil. This allows the primary pump to overcome easily the effects of small suction line air leaks.

Air drawn in due to suction line air leakage, goes into the reservoir, rises to the top of the reservoir and flows through the return line to the supply tank, and finally passes out through the vent pipe. The large reservoir insures self priming of the gear pump and prompt delivery of oil to the cup. The reservoir provides an oil bath in which the pump is submerged at all times, reducing friction and wear.

Function of the Rotor

The metering pump rotor floats on the pump shaft to prevent any misalignment of the shaft from disturbing the proper seating of the rotor against the back plate. The rotor acts as a safety relief against excessively high pressure build-up in the line to the atomizing cup. Pressure in the neighborhood of 75 pounds per square inch will raise the rotor from the back plate, relieving the pressure into the reservoir. No pressure regulation, in the line to the cup, is required or even possible, because no valves are used in this line, with the exception of a magnetic shut-off valve on automatic burners. The metering pump will deliver a constant flow of oil to the cup, developing the required pressure to overcome the cup line resistance to the flow. Naturally, this pressure varies with the volume of flow.

At the present time hundreds of Enterprise metering pumps of all sizes are in service throughout the world in all types of rotary burner installations. The trouble-free operation of these pumps substantiates the assertion that this type of pump furnishes a simple and highly satisfactory answer to viscosity compensation problems. This type pump is not a viscosity compensation device. Because its operation is unaffected by viscosity, it eliminates the viscosity problem from rotary burner installations.

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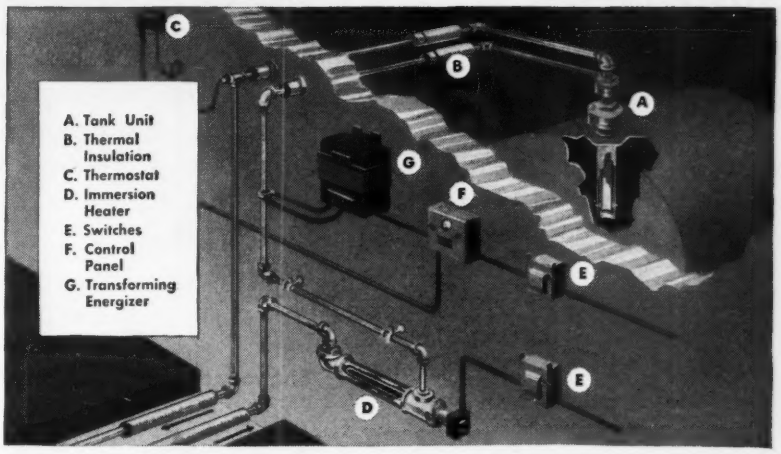

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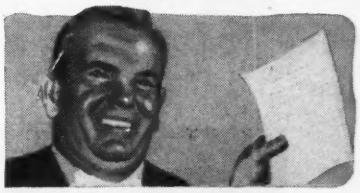

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COMMERCIAL & INDUSTRIAL oilburning

Using damper Controls reduced fuel Consumption

IT WAS EARLY IN 1948 that the Universal Cleansing and Dyeing Co., Cleveland, replaced its old 125 hp horizontal return tubular boiler with two 60 hp Erie City boilers. The engineers designed the boilers' brick foundations to provide ample combustion space and permit the development of 100 hp peak, with the boilers set on a 5 ft. high brick foundation.

Each boiler was equipped with its own steel stack, 30" in diameter and 75' above grade. The water return system consisted of a large receiver tank and 2 turbine-type electric pumps, 1 for each boiler, with water level maintained by means of a float type control installed in each water column. These controls were set so that the pumps returned water to the boilers and automatically maintained the proper level. The boilers are fired with Petro horizontal rotary oilburners.

John C. Burch, engineer in charge of the plant, describing the installation says that after the new boilers were put in operation, it was found that the process load could be carried with one boiler, but the daily average consumption of 260 gals. of No. 5 fueloil seemed excessive.

Sequence draft Controls installed

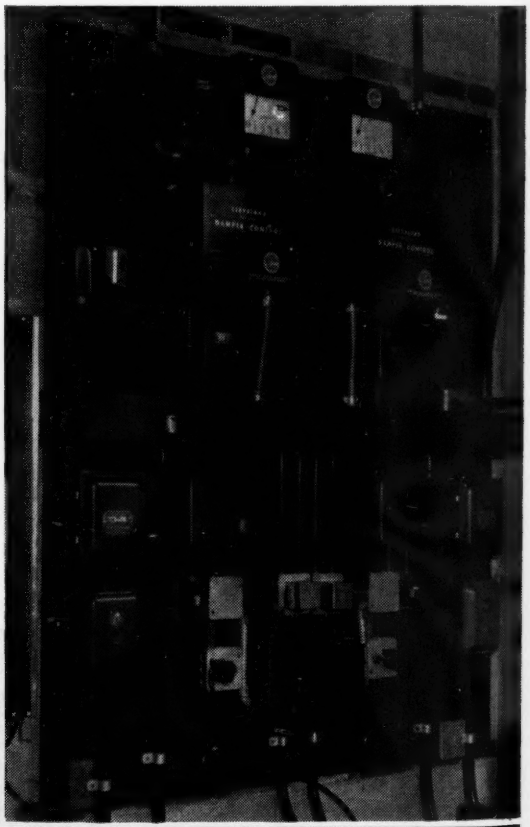
After consultation with Universal's boiler supplier and upon his recommendation, electric sequence draft controls, made by Cleveland Fuel Equipment Co., Cleveland, were installed. Model DCR-B control, with its companion LF-A Lectricarm, along with Cleveland draft gages, were added and an accurate record kept of day-by-day fuel consumption.

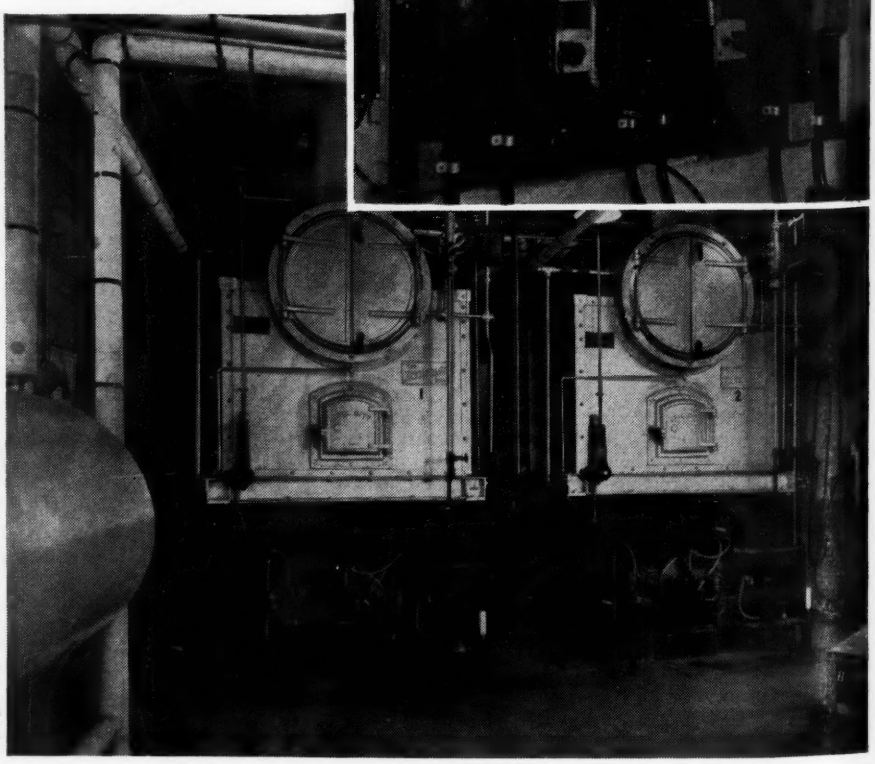
The records indicated that the daily average fell to 200 gals., a saving of 60 gals., or almost 25%. Eugene Schaffer, president of Universal, attributes about 60% of this saving directly to the addition of the Cleveland controls "and the balance to the fact that our engineer has a better understanding of burner adjustments which can be maintained by proper use of these versatile sequence draft controls."

The company characterizes the improvement of the plant as a very "sound investment" in boiler room equipment. Additionally, Mr. Burch explains that while there have been no boiler shutdowns due to failure of the sequence draft controls, the feature of being able to replace wearable portions by plugging-in new parts will facilitate any repairs that might be needed.

The controls also are equipped with a manual selector switch, which in the "full open" position permits the damper to be moved to obtain the greatest available draft for soot blowing.

A third feature permits the draft setting weight to be rotated to adjust the control so that a lighter grade oil can be burned, if desired.





Shown are *the two Erie City boilers installed by the Universal Cleansing & Dyeing Co., Cleveland, in 1948. Added later were sequence draft controls, made by Cleveland Fuel Equipment Co., with a resultant saving in fuel consumption approaching 25%. The panel board used with the installation is shown at the right.*

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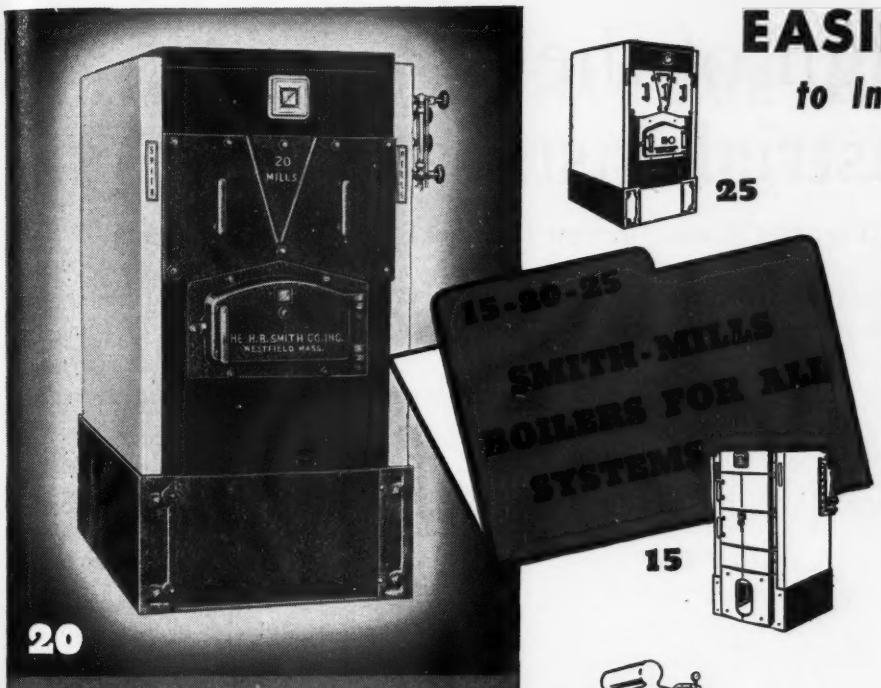

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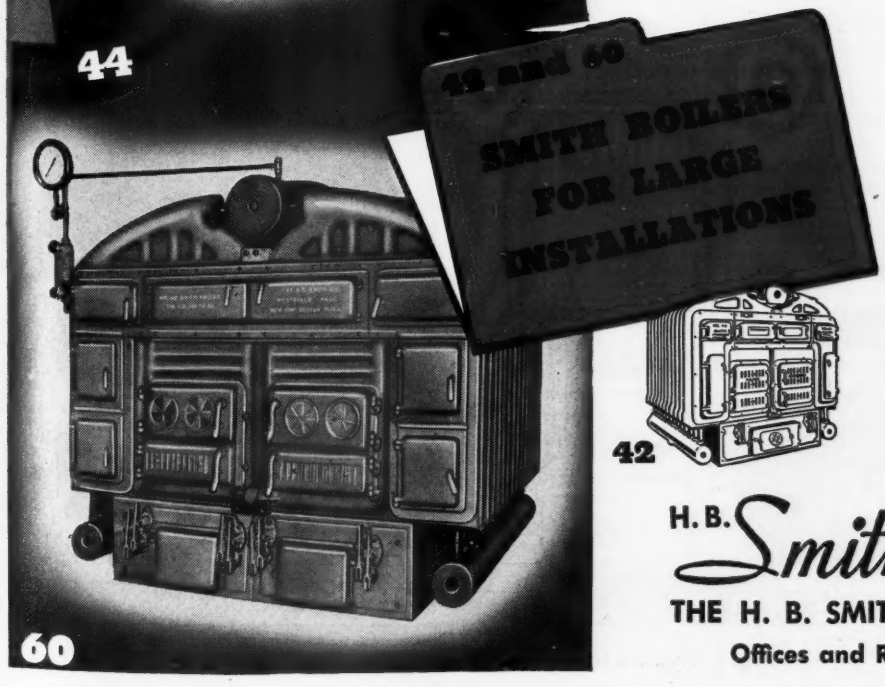

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COMMERCIAL & INDUSTRIAL oilburning

Design of the industrial Installation

Part IV—Firebox Construction for three more boiler Types

by
Kalman Steiner*

PRECEDING ARTICLES have discussed typical practice in boiler settings and firebox design for three standard low pressure heating boilers: cast iron, compact firetube and firebox firetube. The last named often occurs as a high pressure boiler also, but the setting height and chamber design are affected only by the required output, not by steam pressure. This article will continue with boiler settings, taking up three boiler styles frequently encountered in high pressure work: vertical or upright, scotch marine, and horizontal return tubular (hrt).

Vertical Boilers

Vertical boilers are used in small sizes, ranging up to 40 or 50 bhp., but the most common sizes are in the range of 5 to 25 bhp. Smaller sizes are made and used, but seldom burn sufficient oil to jutify installation of an industrial type burner. For burning heavy oil, the vertical boiler poses a few problems, but if a few simple rules are observed, excellent results can be obtained.

Usually, because of the round firebox, a construction employing plastic refractory will be found more satisfactory than firebrick shapes. The standard base that generally supports such a boiler above the floor for hand-firing does not begin to give adequate height for setting the burner or for required combustion volume. As shown in Fig. 1, a fairly deep pit will be needed, or the boiler may be raised onto a high base. (When the metal base is lacking, supporting lugs or gussets may be welded to the side sheet, near the mud ring, to support the boiler on a masonry base.) The access door shown in Fig. 1 facilitates entry into the firebox, but if it runs the cost of the job too high it may be omitted, since the boiler fire door continues to serve the same purpose.

Scotch Marine Boilers

The scotch marine, like the firebox boiler, is made for both high and low pressure service. But as mentioned for the case of the firebox boiler, the boiler setting or combustion chamber design depends only on the firing rate, and is not affected by boiler pressure. The scotch marine has an internal, cylindrical, horizontal furnace or firing tube. In the boiler proper, water-backed surface completely surrounds the flame, inducing high rates of heat transfer. Usually, some sort of furnace extension or dutch oven is attached to the boiler and the burner initiates its flame within this. Since there is no water-backed surface to absorb heat, the lining must be refractory, and considerable thought must be devoted to the design.

The scotch marine furnace extension consists of a steel framework, having a vertical front to support the burner in firing position, and a cylindrical body to conform to the general dimensions of the boiler firing tube. The designer finds he must compromise between opposing tendencies—he would like to make the diameter large to minimize possibility of flame impingement, and he must keep the diameter smaller than that of the smoke hood that surrounds the upper half of the furnace inlet. In length, the extension should not exceed the minimum distance to bring the front plate free of the smoke hood. Longer extensions increase tendency toward flame impingement on the refractory lining before the flame reaches the boiler firing tube, and aggravate the problem of refractory maintenance.

Older scotch boilers used riveted construction; the extension design must provide for protection of the front rivet seam. This protection should incorporate both air cooling by allowing free air circulation around the seam, and adequate refractory lining beyond the point on the extension corresponding to the rivet location on its outside. The extension should never butt up against the seam or surround it. New boiler fabrication methods utilize welded construction and there is no rivet seam to complicate the extension design.

If a more elaborate dutch oven can be used, the shell can be enclosed in a cooling jacket, with about a one-inch

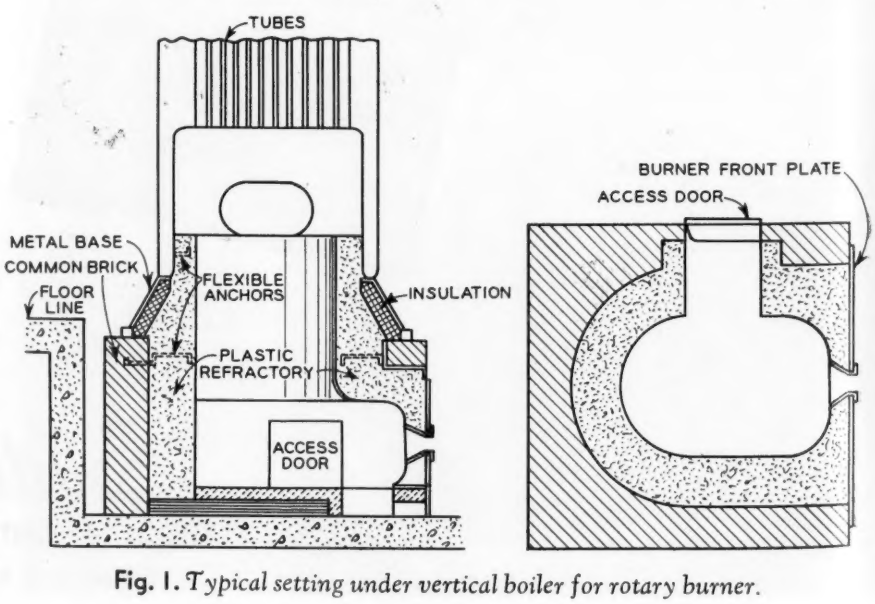

Fig. 1. *Typical setting under vertical boiler for rotary burner.*

*C. Hoffberger Co., Baltimore, Md.

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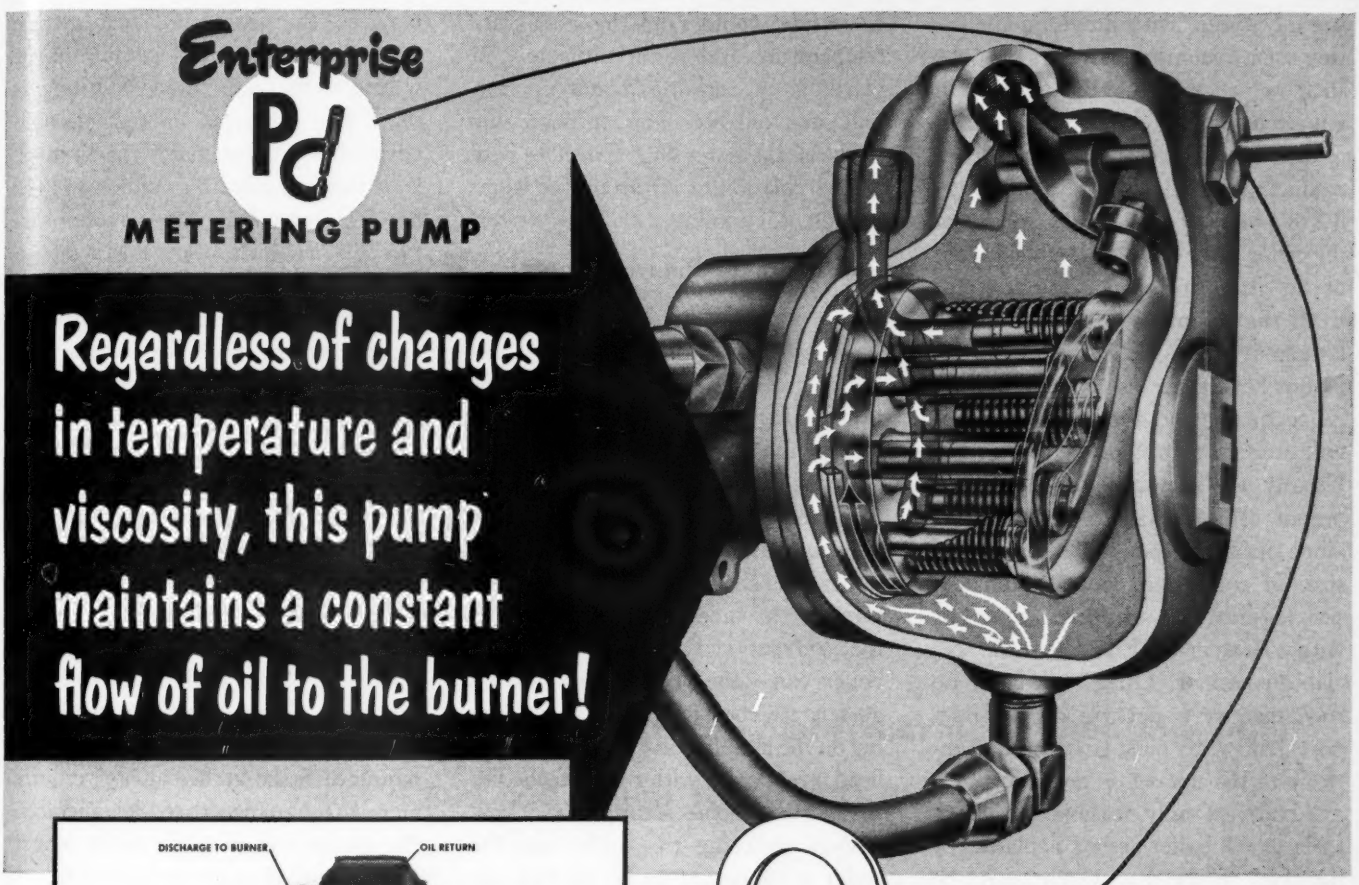
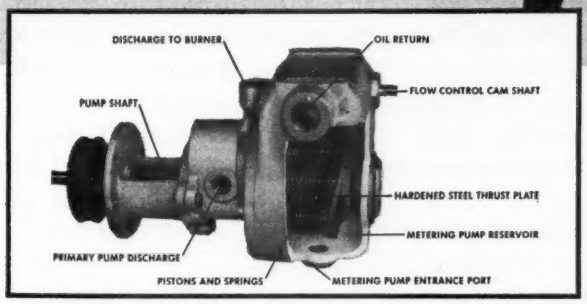
Regardless of changes in temperature and viscosity, this pump maintains a constant flow of oil to the burner!





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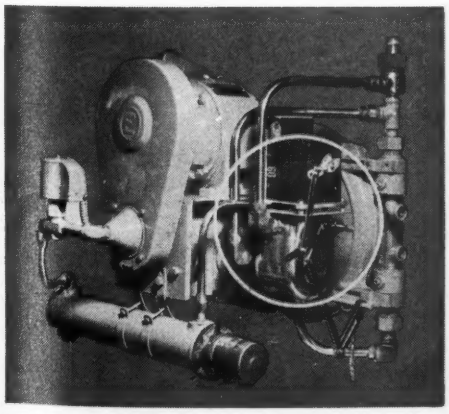
- **Entire unit submerged in oil bath keeps friction to a minimum.**
- **Reservoir is of ample capacity to assure self priming of pumping unit.**
- **Cleaner, more efficient combustion results in sizeable fuel savings.**
- **Delivery rate to the burner is controlled by pump setting.**
- **Minimum oil pressure, insuring absolute safety to the system.**
- **Pump automatically controls oil flow—no adjustment required.**
- **Any air entering the system is by-passed through return line.**



Efficiently and accurately meters various grades of fuel, hot or cold, clean or dirty, in summer or winter. The **P·D** Pump is easily installed on Enterprise pump-type burners. Built in sizes to handle up to 100 G.P.H.

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space between, with provision for letting some combustion air pass over the shell before entering the firebox. In any event, special care should be taken to arrange a series of air ports for introducing secondary air at a multiplicity of points around the periphery of the firing tube. In the confined space of the tube, turbulence is restricted; if all the secondary air enters at the bottom as in the usual arrangement for firebox boilers, air distribution will not be adequate, and the top of the fire will tend to throb and evolve smoke. Usually, the extension design will not permit using the standard secondary air damper corresponding to the burner size. Of course, any port of sufficient size to justify it should be equipped with a damper constructed to the special dimensions. Often, however, no such damper is possible on the inlet ports, and draft must be controlled entirely in the uptake or breeching.

About the only feasible refractory for a scotch boiler firebox is plastic, or unbaked firebrick, which can be moulded into the desired shape. When fired, this material bakes into a continuous and specially shaped form. A subsequent article will discuss details for applying this material, and handling of other refractories. Between this plastic refractory and the front plate there must be a layer of insulation to assist in keeping down the temperature of the plate. The remainder of the extension, however, should not have insulation on either the inside or the outside of the plate. To place it inside would raise the refractory temperature and shorten its life; to place it outside would raise the steel plate temperature and result ultimately in warping. A certain amount of heat will unavoidably flow through the walls of the extension, which is why free circulation of air around it is important, for cooling.

Horizontal Return Tubular

The horizontal return tubular (hrt) boiler enjoyed great popularity twenty-five years ago and earlier. The conventional installation has a red brick setting lined with refractory, forming a firebox under the horizontal cylinder that composes the boiler shell. The fire and combustion gases pass rearward under the shell and return forward through the tubes within the shell. In the conventional brick settings, the boiler can either be supported from gussets attached to the shell and resting on the masonry walls, or from overhead steel beams with rods attached to the gussets. Some settings have steel casings enclosing the walls, and the boiler is supported on beams and columns. In all hrt settings, the blowdown pipe attaches to underside of the shell and passes through the combustion zone, usually leaving the setting through the rear wall, although some boilers use a side wall exit. This blowdown pipe requires special refractory protection.

The shell, or rather the underside of it, presents the only black or heat absorbing surface in an hrt firebox. Hence the first objective is to expose as much of the shell as possible to radiant heat from the flame. This usually means that a bridge wall, intermediate between the front and rear setting walls, is unnecessary. Opening up the setting to make the firebox as long as the boiler results in another decided advantage—it distributes the heat release through a greater volume and the horizontal radiation over a greater surface, all of which means lower refractory temperature and longer life.

Where a flush front was used in the original setting (and that was a very common practice), mounting the oilburner on that front required a very deep arch over the firing bowl in order to have the front wall refractory cover the front rivet seam, which is imperative. In converting these old settings to oil firing, it is a decided advantage to recess the front wall and erect the front plate directly under the front rivet seam of the shell. The front wall can then be practically vertical, except for the firing bowl, and no arch is required. Since arches always require more maintenance than flat surfaces, the recessed front gives much longer service than does an arched front.

Handfired setting of by-gone days usually placed the shell about four feet above the floor level, so that flame from the coal fire practically had to sweep over the shell surface. It is well to drop the floor level under the shell by digging a pit. The additional setting height allows keeping the burner center line low and well away from what would be an impingement zone for the flame to strike the shell if the original setting height were used. If the boiler

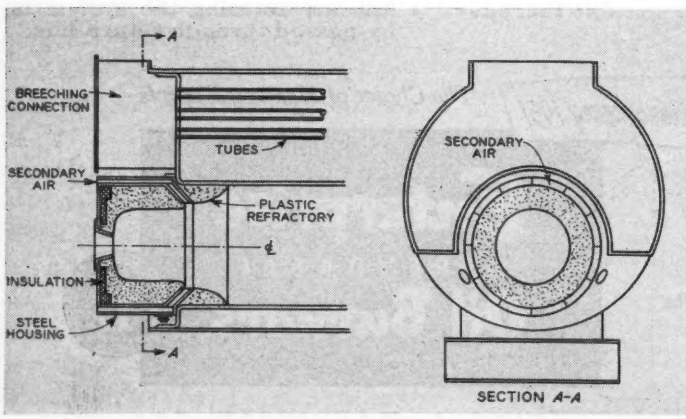

Fig. 2. *(Left): Refractory lined short extension for Scotch Marine boiler.*

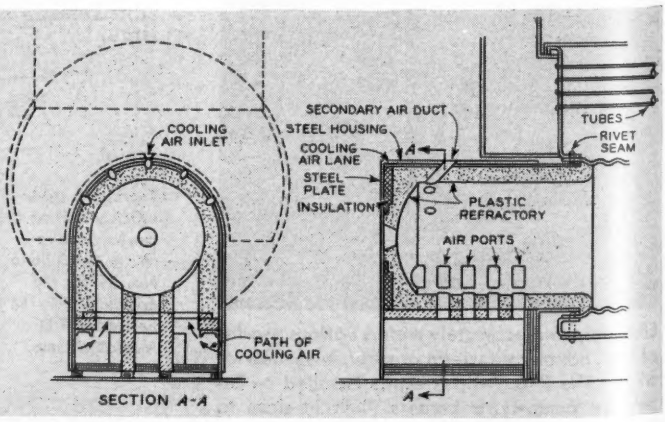

Fig. 3. *(Right): Refractory lined long extension for Scotch Marine boiler.*

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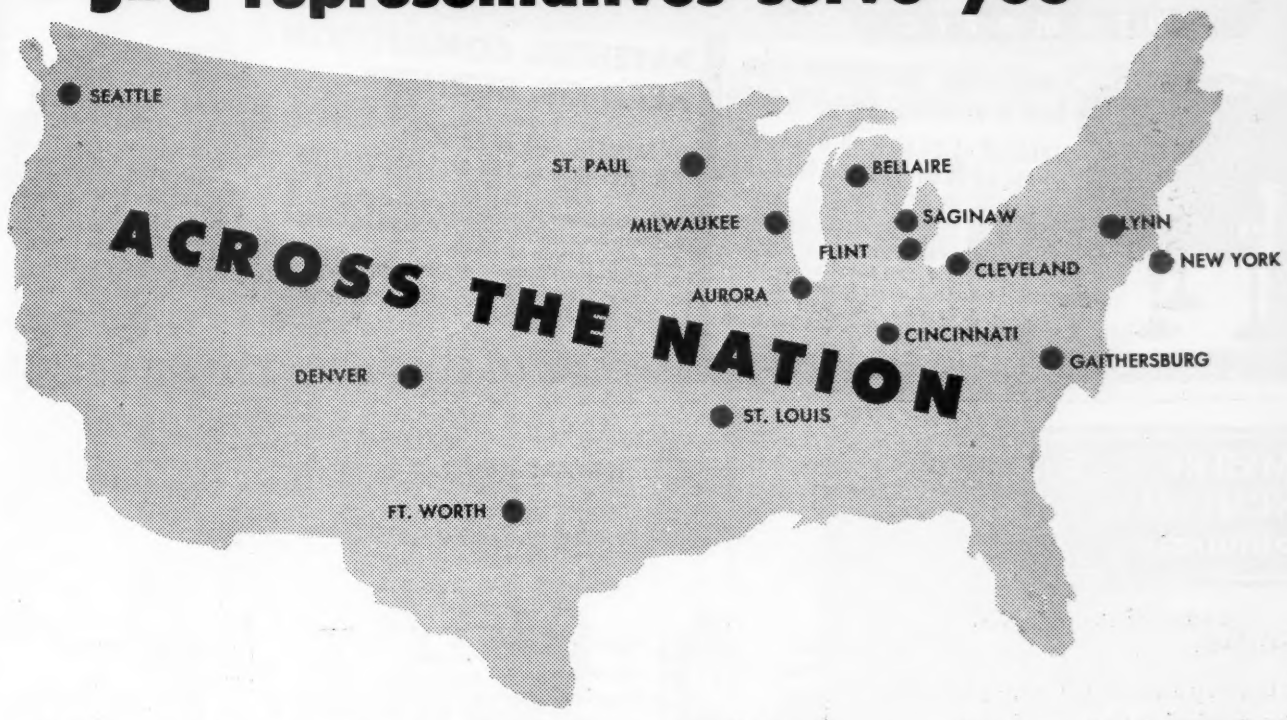

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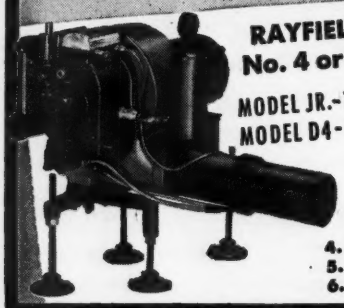

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is to carry loads equalling or exceeding the nominal rating, the firebox walls should be kept as far apart as possible, which usually requires supporting the existing refractory of the side walls (or at least that portion which is still usable) temporarily, until the new refractory wall is in place. If the pitting takes the excavation below existing foundation walls, the latter should be underpinned with red brick. The old firebrick walls are then torn out, after supporting the usable portion, as above mentioned, and the pit floor formed, either of concrete or red brick. From that finished surface, the new firebox floor and walls are started.

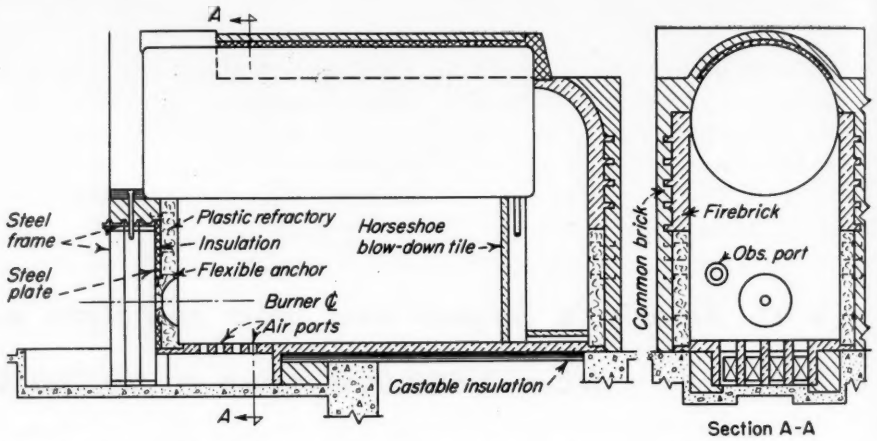


Fig. 4. *Setting of horizontal return tubular boiler with recessed front for mounting rotary oilburner.*

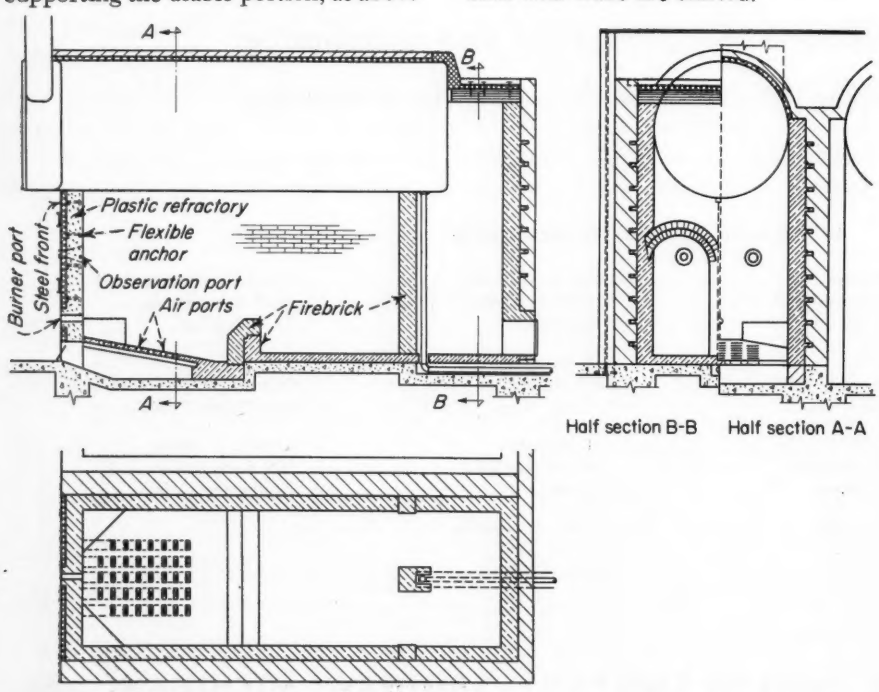
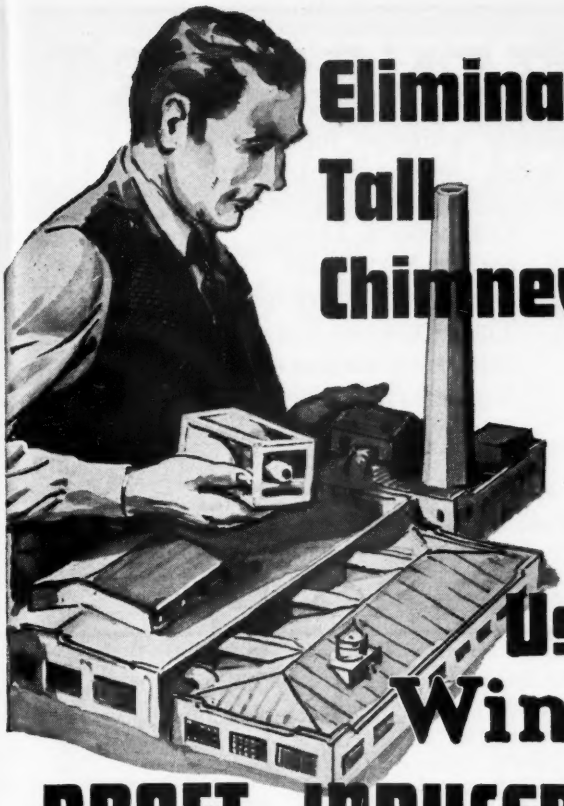


Fig. 5. *Setting of horizontal return tubular boiler with overhanging front for steam atomizing burner.*

Fig. 4 illustrates a typical hrt setting for a rotary burner. Note that about half of the original wall firebrick has been preserved, and that the new refractory from the new floor to the level of the old firebrick is formed of plastic, although of course firebrick could also be used. The original flush front has been recessed inward, and steel channels complete the new steel box overhead to support the uptake connection for the breeching. A small pipe drains bottom of the uptake connection, which is important to get rid of water when washing the boiler out. The boiler blowdown is protected on the firing side and both edges by horseshoe tile, which leave the rear or leeward side open for inspection. Although not shown in the illustration, there would be an access door in the side wall, just under the rear arch. Fig. 5 shows another hrt setting, this one being for a steam-oil nozzle. Here the original setting was already of the overhanging type, so the recessed front is unnecessary.



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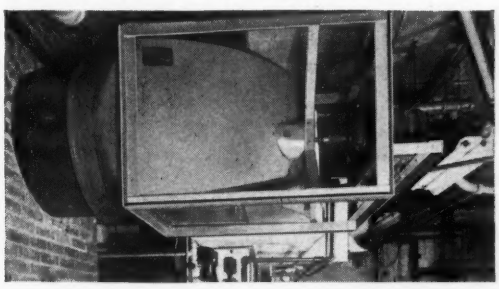

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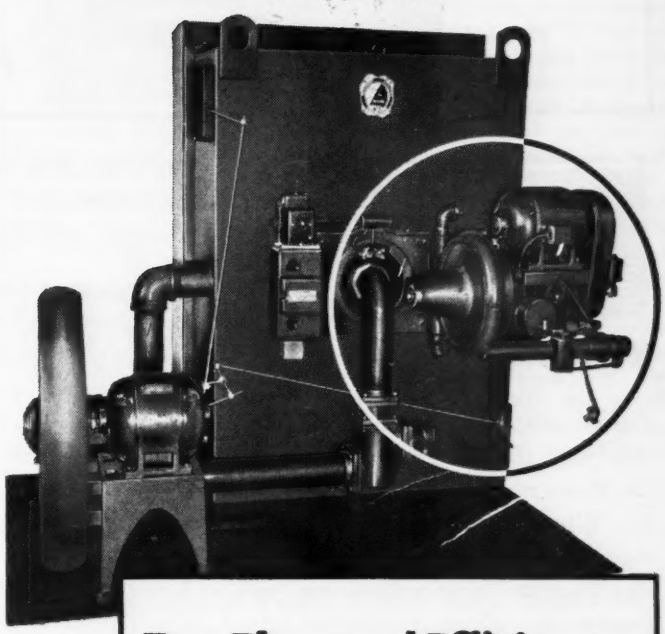

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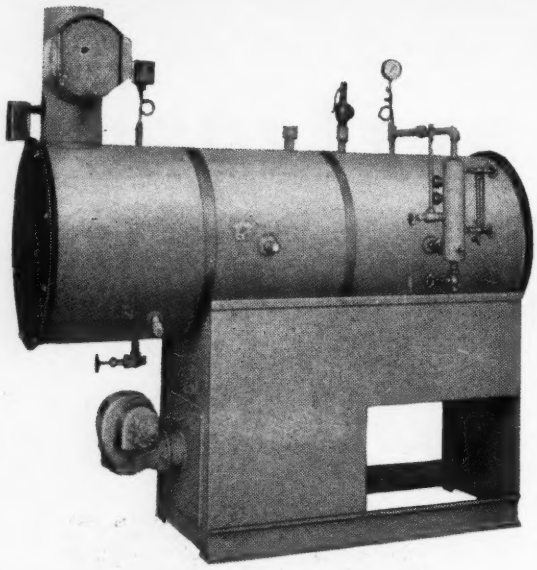

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Wheelco opens larger Western Division Office

LARGER OFFICES at 2320 Milwaukee Ave., Chicago, have been occupied by the Western Division Sales Office of the Wheelco Instruments Co., Chicago. R. A. Schoenfeld, vice-president and Western Division Manager, will manage the offices, serving as sales headquarters for Wheelco representatives and agents in the territory extending from Detroit to the West Coast.

In addition to these branch office sales activities, the new office also will provide complete sales and service facilities for Chicago and fringe areas in Illinois, Indiana and Iowa. Activities other than sales and service will be continued at the Wheelco plant, Harrison and Peoria Sts., Chicago.

Superior's Catalog covers packaged steam Generators

A 4-COLOR, 16-page booklet on Superior steam generators has been prepared by Superior Combustion Industries, Inc., New York 18, N. Y., making profuse use of photographs, cut-a-way and schematic drawings to describe construction and operating principles. Easily-read charts and tables provide essential data, dimensions, specifications and test results.

The booklet was designed to include subjects which salesmen in actual contact with the market have found to be of most interest to prospective buyers. It was written primarily for engineers, yet its explanation of such subjects as induced draft, dry steam, 4-pass downdraft design, flexibility of operation, 5 sq. ft. of heating surface per bhp, oil, gas and combination equipment is prepared to be of interest to anyone concerned with selecting or specifying steam generators.

Cleaver-Brooks displays at Canadian Exposition

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Mr. Resek also spoke at a luncheon the distributors held at the King George Hotel, covering operating, service and maintenance tips, with Frank F. Wymbs, Jr., discussing sales policies and potentials.

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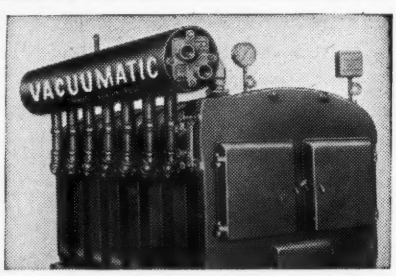

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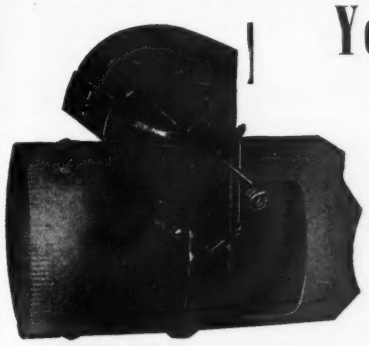

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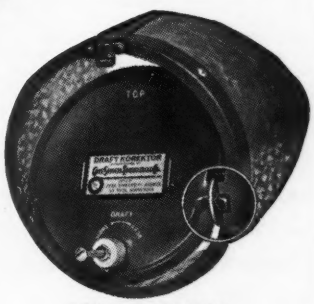

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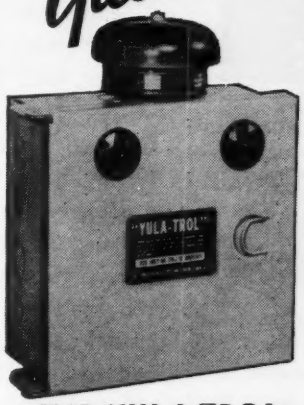

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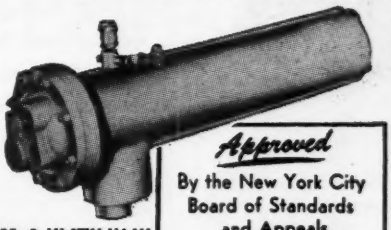

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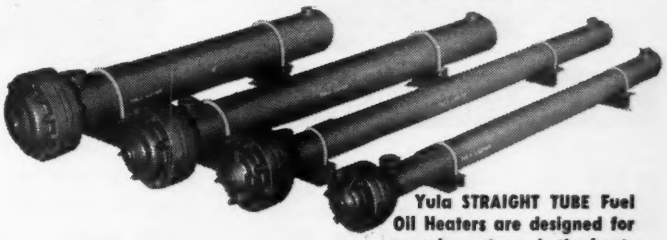

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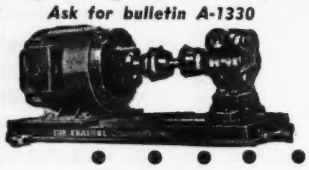

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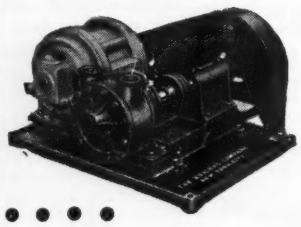

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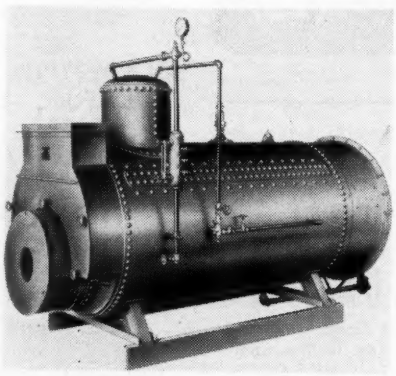

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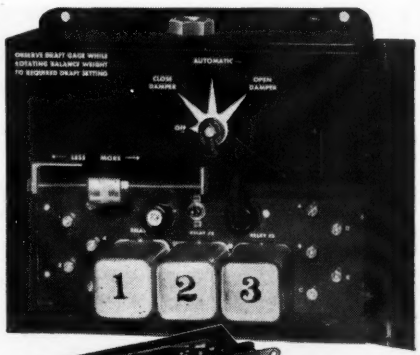

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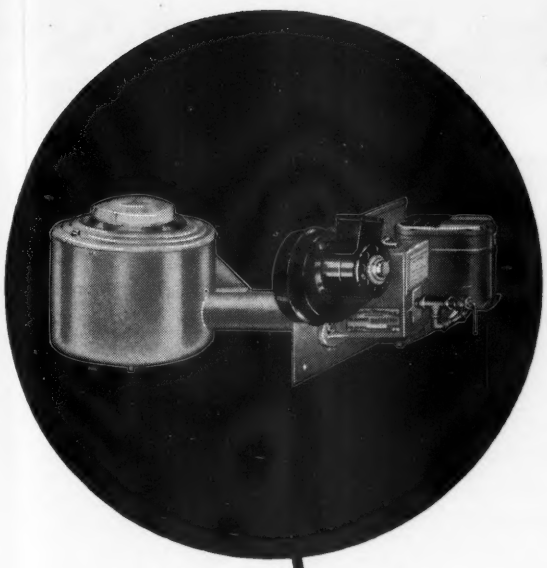

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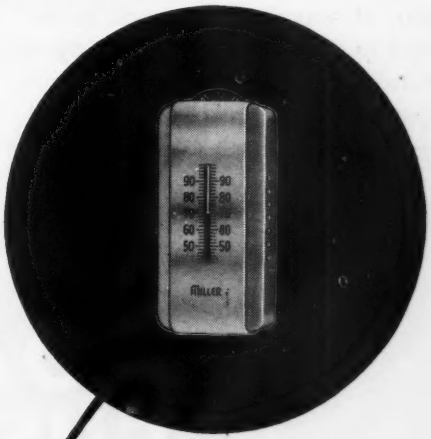

MEMBER OHI OIL HEAT INSTITUTE OF AMERICA

MEMBER NATIONAL WARM AIR HEATING AND AIR CONDITIONING ASSOCIATION INDOOR COMFORT

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SINCE 1844

HEATING PRODUCTS DIVISION, MERIDEN, CONNECTICUT

ILLUMINATING DIVISION: Fluorescent, Incandescent, Mercury Lighting Equipment
HEATING PRODUCTS DIVISION: Domestic Oil Burners and Liquid Fuel Devices
ROLLING MILL DIVISION: Phosphor Bronze and Brass in Sheets, Strips and Rolls

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 18th.

OHI of Pennsylvania starts meeting Schedule

THE OIL HEAT INSTITUTE of Central Pennsylvania has begun a new series of meetings for dealers in its area that got underway in York on October 30. J. Hollis Albert, chairman of the Distribution Div., Oil-Heat Institute of America, was principal speaker at the gathering, which was preceded by a buffet supper. Similar meetings are being held in Harrisburg and Lancaster during November.

The meeting schedule has been evolved on the basis of the Institute holding three general meetings each year, at which members will be invited to discuss and take action upon matters that affect the entire area. Supplementing these will be more informal meetings to take place each month in York, Lancaster and Harrisburg that will be more concerned with industry matters at the local level.

An industry rally is now being arranged for January 9 in Lancaster, to be sponsored by the Institute, according to John Hoback, York, its secretary, and to which all fueloil and oilburner men, together with companies and members of the Association will be invited. Mr. Albert is assisting in organizing the meeting and is urging that it be made industry-wide by encouraging dealers to have their drivers and oilburner servicemen attend.

Miller speaks at IOMA Fall Round-Up

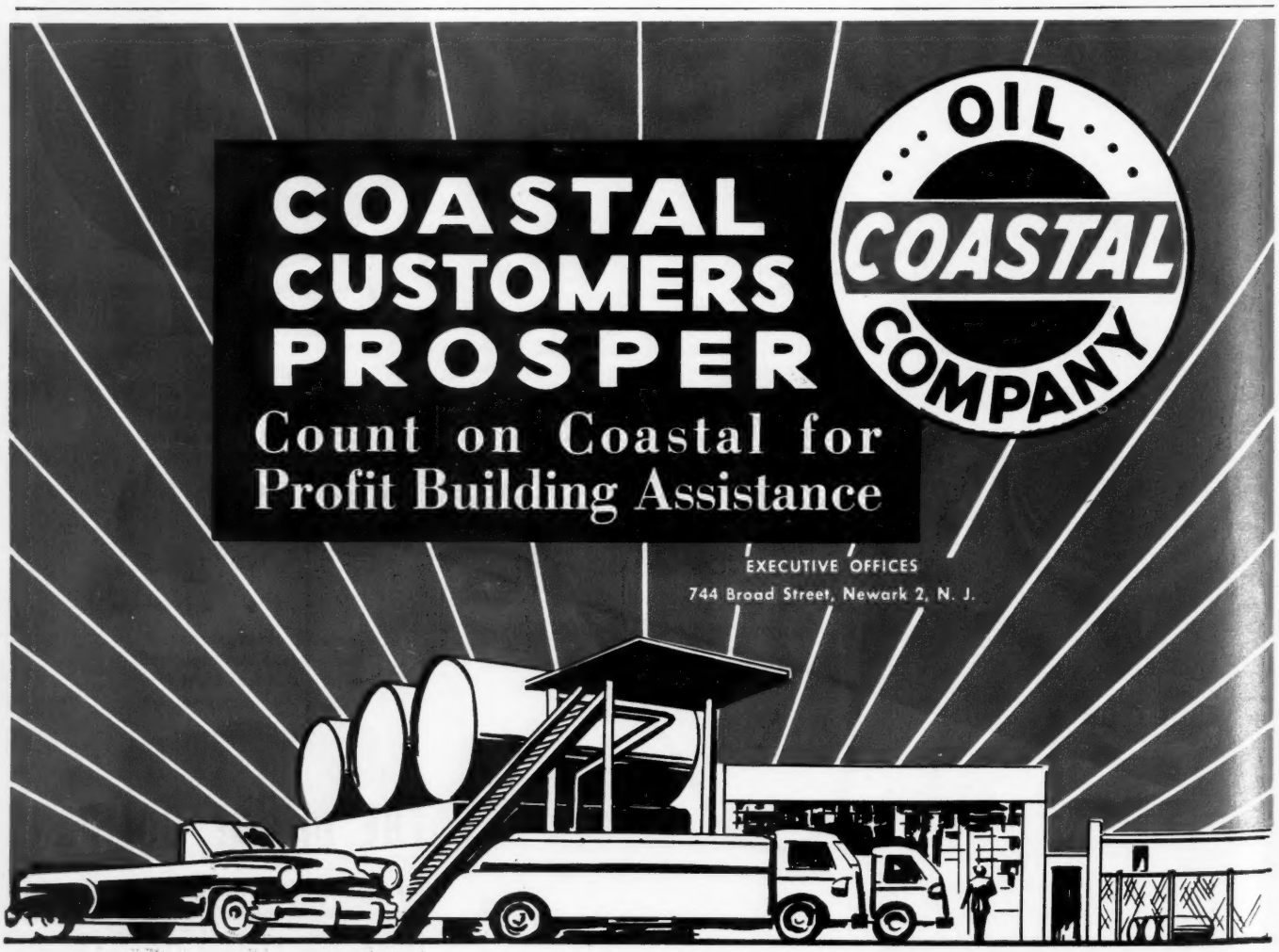
REAR ADMIRAL H. B. MILLER (USN Retired), director of the Department of Information, American Petroleum Institute, was the principal speaker at the Fall Round-Up of the Independent Oil Men's Association of New England, Boston 16, Mass. More than 200 persons attended the affair, held in Boston's Hotel Statler.

Admiral Miller's talk, "The problems petroleum faces from war and threats of war," presented the facts which oil must face today.

Sufficient steel, skilled manpower, and continued freedom to manage its own affairs are mandatory if the U. S. oil industry is to carry on the expansion program necessary to keep pace with skyrocketing demands for petroleum products, said Admiral Miller.

He reported that although U. S. oil companies are sending considerable fuel to the free, democratic nations of Europe to offset the shortages caused by the shutdown of the great Abadan refinery in Iran, distillate heating oil stocks on the East Coast are up almost 40 per cent over a year ago at this time. This means, he said, that the outlook for New England this winter is favorable provided new problems in weather and transportation do not arise.

To keep supply in balance with the petroleum demand which has risen nearly 75 per cent since the peak demand of World War II, according to



Give 'em Both Barrels!

with Luxaire®

GAS OR OIL

Luxaire Basement Air Conditioning Unit

As a gas-fired unit

As an Oil-fired unit

Because! Luxaire Units are

DESIGNED and APPROVED for EITHER GAS or OIL FIRING

with EQUAL EFFICIENCY!

1

2

3

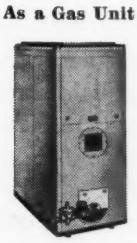
If the customer wants a gas unit, sell him Luxaire! If the customer wants an oil unit, sell him Luxaire!

If the customer doesn't know what fuel he wants to burn, sell him Luxaire. Install the furnace now! Install the burner later.

If the customer thinks he may want to change in the future from oil to gas, or gas to oil, sell him Luxaire, because it's a simple operation to just change the burner, without any change of unit or duct work.

THE GRAVITY FURNACE

As a Gas Unit



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100,000 B.T.U.
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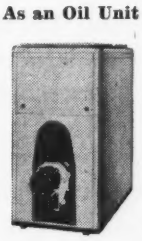
As an Oil Unit



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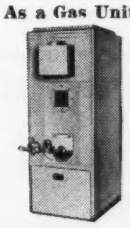
68,000 B.T.U.
at register.

THE UTILITY A.C. UNIT

As a Gas Unit



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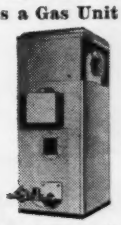
As an Oil Unit

No. OH-84-E
84,000 B.T.U.
at Bonnet.

THE COUNTERFLOW UNIT

As a Gas Unit



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THE Luxaire® C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO

HEATING & AIR CONDITIONING UNITS

Admiral Miller, the oil industry has spent some twelve billion dollars in enlarged and expanded facilities, has increased its production, refining, transportation, and storage capacity by one-fourth, and has reached the record figure of nearly 30 billion barrels of proved reserves, or oil deposits definitely located underground and awaiting production.

Jimmy Swan, humorist, expounded the comical side of why he "should have stood in bed" and Dave Forman rounded out the program by providing accordion music and song. President Horace E. Davenport, George W. Pickering Co., Salem, Mass., acted as toastmaster.

He opened the program by paying tribute to the service that had been rendered for the past three years by Joseph B. Wells, who has resigned as executive secretary of IOMA, effective November 30. Mr. Wells responded by outlining the importance of the work that had been accomplished by the Association and reviewed the problems that face independent marketers.

Here is the key to thousands of homes where you can sell your burner and your services

THE record will show that countless new heating plants have been sold by the man who cleaned an old worn-out one and told the owner that it was time to change.

You actually get paid for cleaning furnaces and finding out who needs something more. Profit from cleanings is that much "velvet".

The powerful new Super Red Streak Model SH—provides both wet and dry pick-up, cleans debris from flooded basements, cleans boiler tubes, all types of heating plants, can be quickly converted to a blower. Special oil soot filter bag makes cleaning oil burners fast and easy.

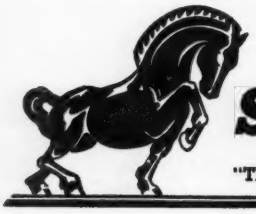
Sales and service in principal cities.

"Once Over Does It"

Super Red Streak Model SH—The heavy duty cleaner that has everything.

Call your plumbing and heating wholesaler or write

NATIONAL SUPER SERVICE COMPANY, INC.
1951 N. 12th St. • Toledo 2, Ohio



SUPER SUCTION

SINCE 1911

"THE DRAFT HORSE OF POWER SUCTION CLEANERS"

Baltimore Banquet marks Oil Progress Week

A BANQUET, held at the Lord Baltimore Hotel on October 15, inaugurated the celebration of Oil Progress Week in Baltimore. The Oil Heat Association of Maryland, Inc., Baltimore 1, Md., was active in arranging the banquet, which was preceded by a cocktail hour.

John R. Sherwood, president of Sherwood Bros., Inc., Baltimore, was toastmaster and introduced the featured speaker, George W. Freyermuth, manager of public relations, Standard Oil Co. (N. J.).

I-B-R Schools to continue during 1952

A COMPLETE SCHEDULE for 24 I-B-R Schools of Modern Heating has been established for the first six months of 1952 by the Institute of Boiler and Radiator Manufacturers, New York. In addition, the following 7 schools have been or will be held during the months of November and December:

October 31 to November 1, Poughkeepsie, N. Y.; November 7 to 9, Derryfield Country Club, Manchester, N. H.; November 13 to 15, Hotel Broadwood, Philadelphia; November 27 to 29, Ridgewood Elks Club, Ridgewood, N. J.; December 5 to 7, Moose Home, New Bedford, Mass.; December 11 to 13, Hamilton Fire Co., Trenton, N. J. and December 18 to 20, Boston.

During January schools are scheduled for Bridgeport, Conn.; Hempstead, N. Y.; Brooklyn and Williamsport, Pa. February classes will be held in Buffalo; Erie, Pa.; Cleveland and Chicago, with other sessions in Milwaukee, Des Moines, Indianapolis and Louisville in March. Four Schools will take place in April at Baltimore; Richmond, Va.; Greensboro and Charlotte, both N. C. and four more during May at Birmingham, Ala.; Jacksonville, Fla.; Atlanta, Ga. and Pittsburgh. Final schools scheduled at this time are contemplated during June in Rochester and Binghamton, N. Y.; Newark, N. J. and Hartford, Conn.

The courses are given in three-day schools, providing instruction in the design and installation of hot water

PORTMAR "WINDSOR" SERIES BOILERS

Steam from 400 to 2200 sq. ft. Hot water from 640 to 3520 sq. ft.

Check these features:

- **Combined boiler and hot water heater.**
- **Tastefully designed jackets.**
- **Built for oil or gas firing.**
- **Maximum efficiency in both utilities.**
- **Large furnace volume.**

Complete line of Vertical Series boilers also available—320 to 1100 sq. ft. steam, 510 to 1760 sq. ft. hot water.

SEND FOR FULL DETAILS AND PRICES *NOW!*

PORTMAR BOILER CO., INC.
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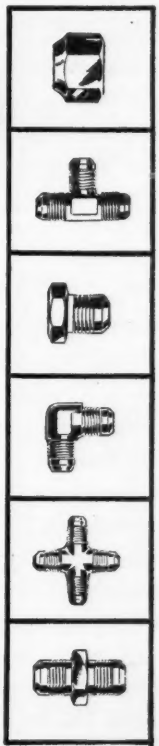
For a FITTING CONNECTION of long standing select MADDEN BRASS



For trouble-free service and ease of installation install Madden commercial and industrial fittings and flare nuts. They are precision machined of forged brass and extruded rods.

Write for free catalog of the complete Madden fitting and accessory line.

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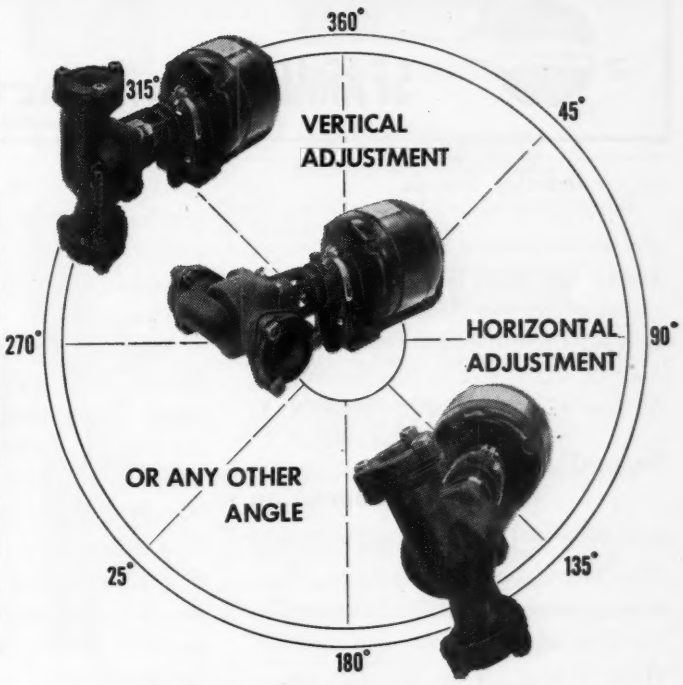

Why 4 Operations Instead of 1?

Why perform four operations when only one is needed with an Econo Hot Water Circulator? Think of the time, the energy and the work you could save in adjusting an Econo Circulator for the flow wanted.

To adjust an Econo at any point on a 360° adjustment nothing need be taken apart, no bolts removed, no gasket removed and replaced.

Moreover, it sustains head pressure, reduces noise transmission and won't overheat.

Sold by jobbers.

Write for our interesting catalog.

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FLOW VALVES HEATING SPECIALTIES

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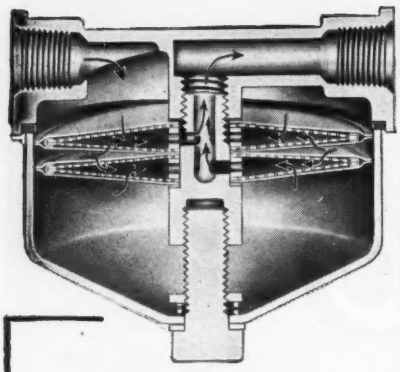


CLEAN FUEL OIL THE SPARKLER WAY

. . . means less burner trouble

. . . fewer call-backs for you

Boost your profits, keep your customers happy, and save needless work for yourself by installing a Sparkler Fuel Oil Filter on every oil burner you service.

The Sparkler Model OB is a *positive* filter because oil cannot by-pass the filtering element. When oil reaches the burner nozzle, you know that all sediment (even micro-size particles) and water have been removed. The burner works more efficiently and your customers need not worry about emergency calls.

And whenever you service a Sparkler-equipped burner, don't take chances by leaving the old discs in the unit. Install a new cartridge. It takes less than a minute, gives you a profit-making sale and protects your customer.

There's a size for every installation
Write for complete details

SPARKLER horizontal plate FILTERS

SPARKLER MANUFACTURING CO., Mundelein, Illinois

Manufacturers of precision filtration equipment for more than a quarter of a century.

and steam heating systems, including lessons on panel heating, as well as radiator and baseboard systems. Tuition for the three days is $23. Details may be secured from the Institute at 60 East 42d St., New York 17, N. Y.

Second Fall Meeting Wisconsin Association

MEMBERS of the Wisconsin Oil-Heat Association, Inc., Milwaukee 2, Wis., were guests of the Miller Brewing Co. for their second regular Fall meeting. After a tour of the brewery and a buffet supper, served in its Stein Hall, the business meeting took place.

The agenda consisted of committee reports, including one from the nominating committee, preparing for the election of officers at the November 22 annual meeting.

Empire State Petroleum holds Fall Convention

THE FIRST FALL CONVENTION held in three years by the Empire State Petroleum Association, New York 17, N. Y., took place at the Lake Placid Club on October 21 to 24. The gathering featured three open morning sessions, and a golf tournament on October 22 and 23. Prizes for golfers were presented at the banquet on the 23d.

ESPA's Profit Requirements Survey, begun three years ago, was discussed at a session conducted by Harvey W. Lewis, Lewis Coal & Oil Co., Port Washington, N. Y., chairman of the Survey committee. A manual, outlining a standard accounting procedure for petroleum jobbers, highlighted the presentation.

Hadwen C. Fuller, Parish Oil Co., Parish, N. Y., and a former New York State Congressman, led the October 22 session, devoted to current legislative matters, and George L. Savory, Savory Oil Co., Binghamton, N. Y., was chairman of the final session.

Mr. Lewis also moderated a discussion of the Accounting Manual at a special meeting of accountants and bookkeepers.

API's annual Meeting held in Chicago

THE AMERICAN PETROLEUM INSTITUTE conducted its 31st Annual Meeting in Chicago, November 5 to 8, with the Stevens Hotel general headquarters for the meeting and the location of all general, group and committee sessions, except those of the Division of Transportation, which made its headquarters at the Palmer House.

Among prominent persons who addressed the gathering were Secretary of the Interior Oscar L. Chapman, Petroleum Administrator for Defense and General of the Army Omar N. Bradley, Chairman of the Joint Chiefs of Staff. Mr. Chapman addressed a general session on November 7, General Bradley spoke at a similar session the following day, as did Eugene Holman, president, Standard Oil (N. J.).

Other speakers included Governor Allan Shivers of Texas and Frank M. Porter, president of the Institute. W. Alton Jones, chairman of the API Board of Directors and president of Cities Service Oil Co., New York., presided at both general sessions. There were more than 100 committee sessions during the annual meeting, some of them getting underway as early as November 2.

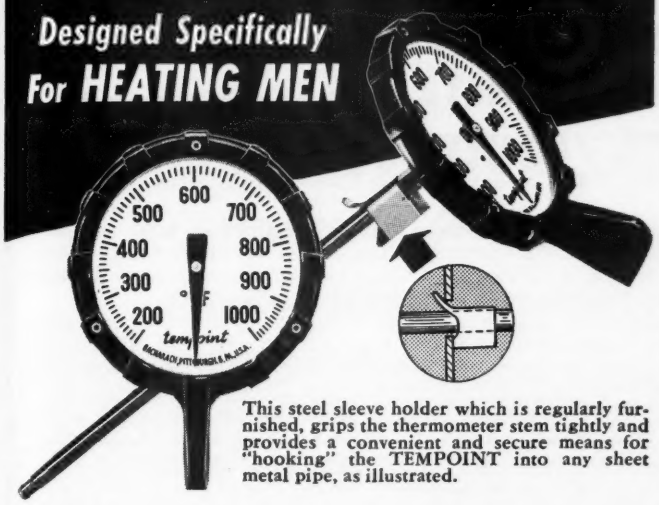
Lt. Gen. Ernest O. Thompson, one of the nation's foremost petroleum conservation experts, received the 1951 American Petroleum Institute's "Gold Medal for Distinguished Achievement." Presentation was made at the November 7 session by Mr. Jones.

The Division of Marketing held its first group session the afternoon of November 5, over which Harry J. Kennedy, Continental Oil Co., Houston, presided. Another Marketing session took place on the morning of November 6, Mr. Kennedy again presiding. At this assemblage was presented the report of the Nominating Committee for the election of members of the General Committee of the Division.

John W. Harper, president, Harper Oil Co., Long Island City, N. Y., and chairman of the National Oil Jobbers Council, delivered one of three addresses at the November 5 Marketing session. He talked about "The importance of independent marketers to the oil industry." C. L. Burrill, director of the program division, Petroleum

A FLUE GAS THERMOMETER

Designed Specifically For HEATING MEN



This steel sleeve holder which is regularly furnished, grips the thermometer stem tightly and provides a convenient and secure means for "hooking" the TEMPOINT into any sheet metal pipe, as illustrated.

Temperature indications of this precision bi-metal thermometer are as fast as those of the usual mercury thermometer, but this instrument is not subject to the many breakage hazards of ordinary thermometers. With reasonable care it will retain its guaranteed accuracy of within 1% of its range indefinitely. The three-inch diameter face, with large numerals and clear graduations together with the red V-shaped pointer make the TEMPOINT exceptionally easy to read, even in dimly lit locations.

This is one of a complete line of heating test instruments. Ask your jobber about the TEMPOINT or write for Leaflet 775.

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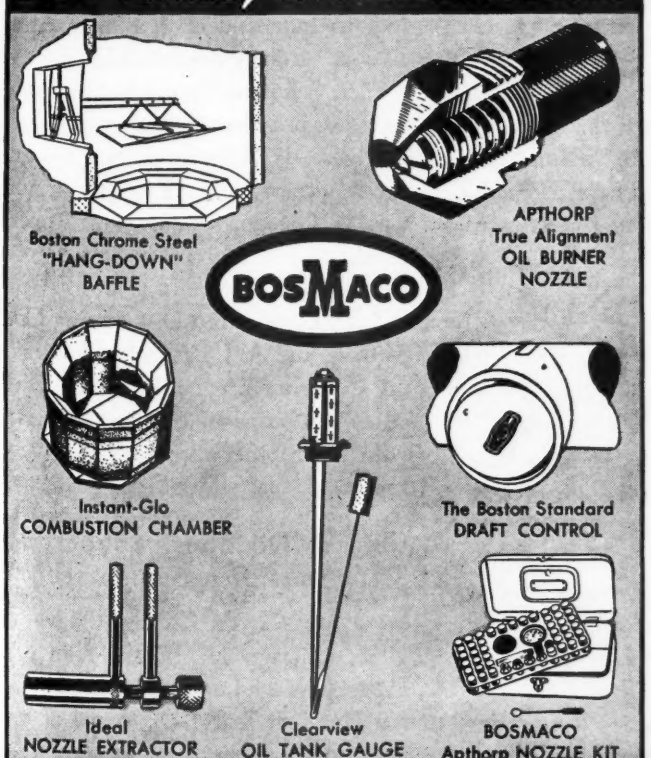

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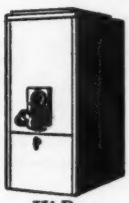
BOSTON MACHINE WORKS COMPANY
Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

AGAIN in '51

MORE FURNACE MANUFACTURERS THAN EVER BEFORE WILL USE THE KRESNO-STAMM P.A.G. *Ball Flame* BURNER

This year more manufacturers than ever before—at least 59—will use the Kresno-Stamm P.A.G. Ball Flame Burner. For every application they have overwhelmingly accepted the Ball Flame as the best and most versatile unit.


Hi-Boy

HI-BOY

More manufacturers of Hi-Boy furnaces will use the Ball Flame Burner.

Gravity

GRAVITY

More manufacturers of Gravity furnaces will use the Ball Flame Burner.

COUNTERFLOW

More manufacturers of Counterflow furnaces will use the Ball Flame Burner.

Counterflow

UTILITY

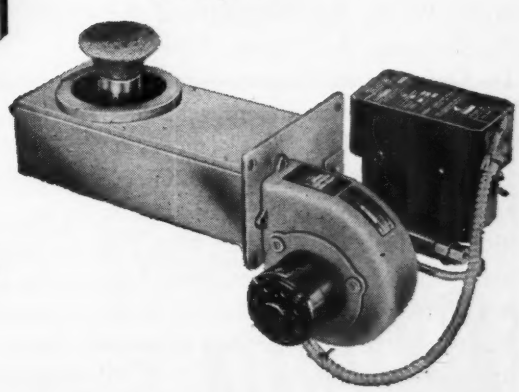
More manufacturers of Utility furnaces will use the Ball Flame Burner.

Utility

More manufacturers choose the versatile Kresno-Stamm Ball Flame because

- ✓ It costs less than a gun type burner.
- ✓ It operates more efficiently at capacities up to 1 G.P.H.
- ✓ It costs less to install.
- ✓ It requires no combustion chamber.
- ✓ It requires no stack relay.
- ✓ It is a profitable addition to their line of gas burners and gun type oil burners.

The Kresno-Stamm P.A.G. Ball Flame is your best bet, too. Write today for specifications.



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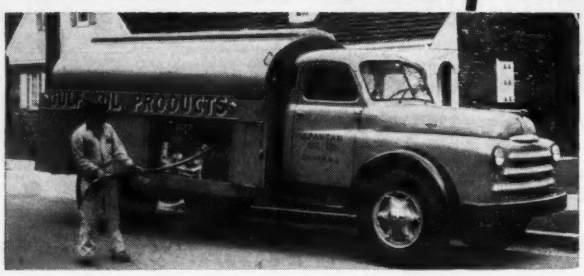

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1300 gallon — 2 compartment tank — Fully Skirted, Top Shrouding, Your Choice 2" Ticket Printer 125 foot 1¼" Hose and Electric Reel, 1951 Dodge 2 Ton Model HH with 8.25x20 10 ply tires **$4,280.00**

1600 gallon — 2 compartment tank — Equipment same as above. Mounted on a 1951 Dodge 2½ Ton Model K Chassis with 900x20 10 ply tires **$4,950.00**

2200 gallon — 2 compartment tank — Equipped with 2" ticket printing meter (your choice) 125' 1½" Hose and Electric Reel. Mounted on a 1951 Dodge 3½ Ton Model V with 1100x20 12 ply Tires ...**$6,975.00**

Rear-installed equipment optional on all sizes.
Other Sizes, Prices on Request — All prices subject to 5% Federal Tax

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Phone: Hawthorne 7-2100-2101-2102
300 Block on LINCOLN AVENUE **HAWTHORNE, N. J.**

Administration for Defense, discussed the "Oil industry outlook in the defense economy" and Robert W. McDowell, president, Mid-Continent Petroleum Corp., Tulsa, rounded out the program with a talk on the "Oil industry's contribution to defense."

The November 5 meeting was an open business session which received a report of the Committee for the Development of a Service Program for Marketers.

More than 5,000 oil men from coast to coast attended the 4-day meeting.

Trustees elected by Warm Air Association

AT ITS REGULAR meeting on September 14, the board of trustees of the National Warm Air Heating and Air Conditioning Association, Cleveland 14, Ohio, elected four new members from a field of nine nominees. Sheldon Coleman, president, The Coleman Co.; Lyle C. Harvey, president, Affiliated Gas Eqpt., Inc.; Edward P. Hayes, vice-president, C. A. Olsen Mfg. Co. and John W. Norris, president, Lennox Furnace Co., were added to the board to serve the balance of this year and in 1952 and 1953.

Several months ago manufacturer members of the Association increased the number of trustees from 13 to 17, with these new members added to bring the board up to authorized strength.

Geologist featured at Washington Meeting

THE OCTOBER 16 meeting of the Oil-Heat Institute of Greater Washington, Inc., Washington 1, D. C., was arranged to observe Oil Progress Week. Held at the DuPont Plaza Hotel, it featured Earl Trager, geologist of the Federal Power Commission, whose talk imparted up-to-date information on the world-wide oil situation and included predictions on what may be expected in the future.

Mr. Trager recently returned from a trip to various parts of the world and prior to his association with the FPC had been chief geologist for several oil companies and had done foreign work for others.

Sheet metal Men attend Muncie, Ind., Meeting

A DISTRICT MEETING, held on October 18 at Muncie, Ind., was sponsored by the Sheet Metal and Warm Air Heating Contractor's Association of Indiana, Inc., Terre Haute, Ind. A committee, consisting of V. Hazelton, George Hirons and Sherman McCoy, made arrangements for the meeting, which included refreshments and entertainment.

The business portion of the meeting, which took place at the Hotel Roberts, introduced three speakers. John Scheel, heating engineer, Central Indiana Gas Co., discussed gas restrictions and other information about gas-heating, followed by Ed Carter, publisher of *Snips*, who spoke about current Government regulations and controls, followed by a forum discussion of the subject. William E. Garber, Jr. concluded the meeting with a talk entitled, "Today's best buy."

Indiana Petroleum Group names Schuster President

AT ITS OCTOBER 14 annual meeting, the Indiana Independent Petroleum Association, Indianapolis, Ind., elected Francis Schuster, Troy Oil Co., Indianapolis, president, and named Russel Williams, Jr., Gaseteria, Inc., Indianapolis, vice-president. Emmett Farmer, Capitol Oil Co., Camby, and Robert R. Moore, Indianapolis, were re-named treasurer and secretary.

J. D. Gray, Gray Distributing Co., Muncie, and A. J. Lassus, Jr., Maumee Oil Co., Fort Wayne, Ind., were added to the board of directors to serve with seven other directors who were re-elected.

Chicago Oil Men's Club sponsors Progress Luncheon

ON OCTOBER 18 the Chicago Oil Men's Club, Chicago 11, Ill., held an Oil Progress Week Luncheon at the Sheraton Hotel. It featured a panel of experts in the form of a quiz program, with "Bud" Waller as moderator.

The experts who made up the panel consisted of M. H. Plummer, vice-president, Pure Oil Company, for pro-

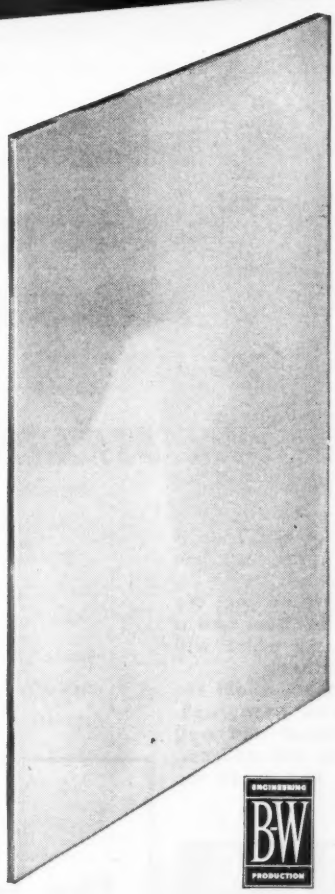
Ingersoll

HEAT-RESISTANT STAINLESS STEELS GIVE ALL FOUR!

-when used for Combustion Chambers

1. MORE QUIET BURNER OPERATION
2. CLEANER HEAT
3. BETTER TEMPERATURE CONTROL
4. CONSIDERABLE SAVINGS ON FUEL COSTS

If you are using or contemplating the use of heat-resistant stainless steels for combustion chambers for oil burner furnaces, we are specialists in producing these types of steels. Whether you are a large or small user of these steels our steel making facilities can offer exceptional service by especially shearing to your specified combustion chamber steel blanks, or multiples thereof. Write us for additional information.



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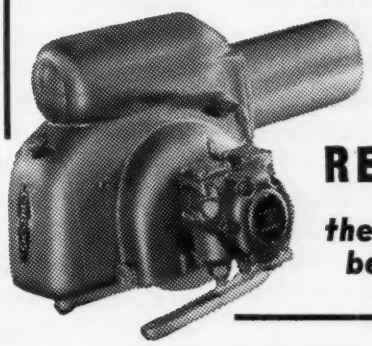
Plant: New Castle, Indiana

If you're gunning for Oil-Burner Sales . . . gun with the



HERCO

RESIDENTIAL

the oil-burner that's best by fire test!

Yes, it's factually TRUE

. . . that the HERCO RESIDENTIAL (and every other Herco burner) is given our "A to Z" *factory fire test* before pronounced fit to fill your order.

. . . that every piece of metal that goes into the assembly of a HERCO RESIDENTIAL is a grey or malleable iron casting.

. . . that every Herco oil burner is *precision-machined* for best performance.

. . . that there is interchangeability of parts among all models in the complete HERCO line.

. . . that every HERCO oil burner will give years of trouble-free service. (We can back this statement with many actual case histories.)

THE "DEPENDABLE" HERCO LINE IS WORTH INVESTIGATING FURTHER!

Write today! Send for our three folders, describing in detail the Herco family of fine oil burners. If you are interested in selling dependable burners with a profit you can pocket for keeps (without costly returns), then write today.

HERCO *The Oil-Thrifty* OIL BURNER

HERCO OIL BURNER CORPORATION
LANCASTER, PA.

duction; E. F. Nelson, vice-president, Universal Oil Products Co., for refining; J. W. Boatwright, manager of marketing distribution, Standard Oil Co. of Indiana, for economics and transportation and R. J. Thompson, vice-president, Apex Motor Fuel Co. and president, Illinois Petroleum Marketers Association, as the marketing authority.

The panel answered questions from the floor on subjects related to the various categories.

Planning new Series of Indoor Comfort Conferences

A PROGRAM of Indoor Comfort Conferences being planned during 1952 by the National Warm Air Heating and Air Conditioning Association, Cleveland 14, Ohio, will include completely new material on the latest warm air heating applications. Guy A. Voorhees, the Association's technical secretary, will instruct the 1952 classes as he has done for all previously held Conferences.

Perimeter heating will highlight the program with new design and installation suggestions for applications in concrete slab and crawl space construction. For structures built on concrete slabs the installations to be covered include loop and radial systems and a perimeter lateral system. Crawl space applications to be discussed will be radial, plenum and extended plenum duct systems.

The use of small warm air ducts also will be featured in the courses with the development of special material, including duct sizing tables. Discussion of basic principles will be presented, as well as actual problems for classroom solution. On the merchandising side, the Conference program will discuss how to turn service calls into more sales, along with suggestions on how servicemen and installers can profit by increasing their selling abilities. Merchandising ideas, market opportunities and news uses for warm air heating systems will be presented.

Eighteen classes, with dates to be established later, are scheduled in Birmingham, Ala.; Boston; Charlotte, N. C.; Chicago; Columbus, Ohio; Dallas; Denver; Des Moines; Duluth; Houston; Little Rock; Oklahoma City; Peoria; Philadelphia; Pittsburgh; St. Louis; Salina, Kan.; South Bend.

Illinois Chapter ASHVE inaugurates new Season

AN OCTOBER 9 meeting inaugurated the 45th season of the Illinois Chapter, American Society of Heating & Ventilating Engineers, Chicago 2, Ill., featuring speakers who described significant developments in the improved design and operation of hot water heating systems.

John W. James, vice-president in charge of research, McDonnell & Miller, Inc., Chicago 18, Ill., traced the development of present day systems from the earlier gravity type open system and emphasized the importance of providing proper relief valves to function like the pop safety valves on steam boilers. When a relief valve operates, he continued, large quantities of water and steam may be discharged so that a low water condition results, highlighting the importance of a low water cutoff or water feeder.

YOU'RE ON THE ARMSTRONG MAP

. . . IN A STRATEGIC LOCATION

Today especially, if you were to try to carry enough warm-air furnaces so that you could deliver any needed unit from stock, you'd have a back-breaking inventory.

The Armstrong distribution system takes that load off your back, but gives you its benefits . . . *all* of them, without the investment . . . without any financial burden at all. A nearby Armstrong distributor carries your inventory, right in your back-yard. With him in the picture, you can match the largest dealer stock, the best engineering knowledge, the latest installation procedure, the most effective retail sales promotion.

But the line is what counts, you say? Well, have you seen the *three* new oil units Armstrong offers? A new horizontal; a new gravity; a new hi-boy. Added to an already strong oil line . . . with more coming!

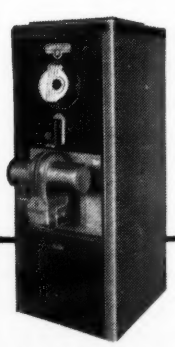
And . . . if gas is bothering you: We have a line for that situation, and a *local* promotion campaign which will turn *lost* sales into *more* sales.

If you want to hear more about the new oil units, check this paragraph, tear out the advertisement and mail it to us with your name and address. If gas is the problem, just check the paragraph above.

ARMSTRONG FURNACE COMPANY

COLUMBUS, OHIO — DES MOINES, IOWA

Please address Dept. FO at our plant nearest you
Warm-Air Furnaces—Oil, Gas, Coal—A Complete Line



The Ideal, Compact OIL FURNACE

Compact size is essential for utility-room installation, but so *are efficiency and attractive appearance.* They're *all* wrapped up in this Armstrong L6-110 Gun-Type Oil Hi-Boy. Powerful *twin* blowers assure effective heat transfer and distribution. First-class construction minimizes service needs. Write for specifications.

H. A. Lockhart, chief engineer, Bell & Gossett Co., Morton Grove, Ill., discussed the problems of designing forced hot water heating systems for multi-story buildings and explained his recommendation for dividing such a system into vertical zones with converters for each zone. Also, rather than operate the boiler under high pressure code requirements, he suggested the use of a high pressure-low pressure boiler, which can be used to heat water at pressures up to 160 psi, but is not permitted to heat the water to temperatures higher than 250° F.

I-B-R publishes Code for finned tube Radiation

PUBLICATION of the "I-B-R Testing and Rating Code for Finned Tube Type of Radiation," adopted by its members on May 15, 1951, has been announced by the Institute of Boiler and Radiator Manufacturers, New York 17, N. Y. Purpose of the code is to provide a uniform procedure for measuring the output of all types of finned tube radiation, regardless of the material from which they are made.

The term "finned tube type of radiation," as used in the code, applies to steam or water heated room heaters composed of a finned tube element fabricated from metallic tubing with a plurality of metallic fins attached to the tubing by means of mechanical or other type bond. They may be installed bare, or with open type grilles, covers or enclosures having top, front or inclined outlets. The term does not include room heaters with this type heating element which are designed with enclosures to replace the conventional baseboard. These are covered by an I-B-R testing and rating code for baseboard type of radiation. Neither does the term include convectors, which are designed only for installation in an enclosure and which are covered by Commercial Standard CS 140-47.

Manufacturers may conduct tests under the new code in their own laboratories, with all observations taken and results obtained then submitted to the Institute on forms provided. The data are reviewed by the Finned Tube Rating Committee to determine that tests have been conducted properly and to see if approval of the requested I-B-R ratings is warranted.

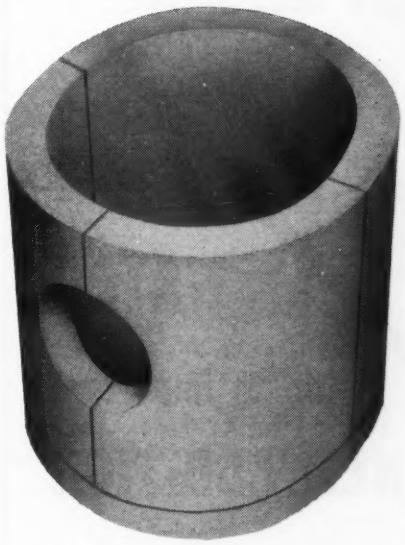
Manufacturers do not have to be members of the Institute to obtain the approval and to use the I-B-R emblem. A license, executed between the manufacturer and the Institute, specifies the conditions under which the ratings and emblems may be used, and no manufacturer is to be permitted to use them or state his products have been tested in accordance with the new code until written authority has been issued.

Requests for license or other information about the new code may be obtained from the Institute at 60 East 42nd St., New York 17, N. Y.

❖

D. Paul Bailey, formerly a member of the market research department, Iron Fireman Mfg. Co., Cleveland, Ohio, is now director of market research and *C. F. Merrick,* a member of the Iron Fireman field organization since 1936 and formerly a district sales manager in the region, has been appointed manager, Central Region.

Do Your PRESENT PRECAST CHAMBERS Give You ALL these Advantages?



1. Low initial cost.
2. Low installation cost — only 5 pieces to assemble.
3. K-factor equal to insulating brick.
4. Excellent performance with either high or low pressure burners.
5. Scientifically packed to prevent breakage.

. . . if the answer is NO -- contact us NOW!

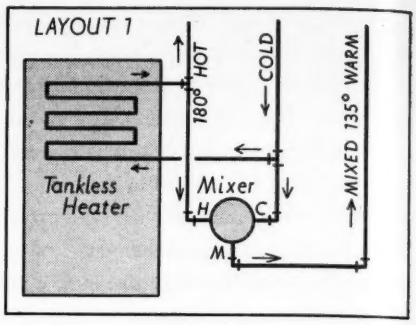
KOLB REFRACTORIES COMPANY Meadow & Jackson Sts. Philadelphia, Penna.

KolbKast Insulated Chambers

Readers' Problems

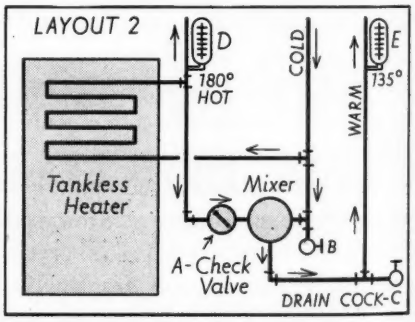
Q. This hot water layout in our drawing provides 180° hot water for washing machine and dishwasher, and 135° water from a mixing valve for the house lines, in a way your articles have described. Trouble is, when 180° water is drawn, the mixer gets cold, and line from output of tankless heater to point marked "H" on the mixer also gets cold, proving cold water is leaking through cold mixer when it should not. Cold water escaping through mixer chills the 180° water coming from tankless. Doesn't this make the 180° hot water line give water cooler than it should? Doesn't this prove the mixer is defective? Give us all the suggestions you can, please, for this set-up. We want it to be perfect.

S. F., Joplin, Mo.



A. The mixer can be expected to chill in the way you describe when water is drawn from the 180° line, because the valve or valves in such a mixer do not close dead-tight. What you say does not, then, prove the mixer is defective. The trickle of cold water through the mixer, which bothers you, probably is negligible. If you can do this easily, however, take apart the mixer and make sure there's no dirt, scale, or chip lodged in it, keeping open a valve that should close when the mixer is cold.

You could install the check valve which we show in Layout 2, to reduce



the trickle of water through the mixer when water is drawn from the 180° line. Because you want the job to be perfect, consider adding to it the two thermometers we show in this layout. Tremendous pleasure and gratification has come of using these thermometers on similar two-temperature hot water layouts.

* * *

Q. Have you any past articles printed on the subject of the heating of Russian or Turkish baths? If so, are reprints of these available? Thank you.

F. T. A., Hartford, Conn.

A. Check-ups made in an effort to help you show we have given details of firing boilers designed for gas, bake

Our 2" BURN-RITE ANTI-SYPHON VALVE

IS Now Available

Please Mark Your Records

Available from 3/8" to 2" inclusive, in 5 ft. to 20 ft. head pressures.

WATCH

for an important

NEW ADDITION

to the family of

BURN-RITE OIL BURNERS

Write TODAY for prices and information

BURN-RITE PRODUCTS CO.

354 Sawmill River Rd. Yonkers, N. Y.

ovens of several types, potato chip vats, hospital and municipal incinerators, and finally crematories, but we have not Russian or Turkish baths.

The designers and manufacturers of the bath equipment usually indicate the boiler outputs needed for their installations. Knowing the load in terms of horsepower or Btu per hour, an oilheating equipment dealer can provide the proper boiler and burner.

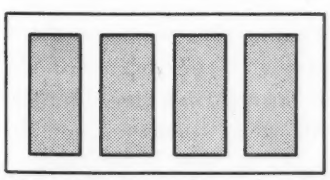
If you really want to go into Russian or Turkish baths, starting at scratch and designing the entire equipment, you should study up and learn things about such baths which are beyond the knowledge of typical oilheating experts. Cursory knowledge can be gained by visiting a few baths similar to the one you have in mind and determining the capacity of the boiler room equipment compared to the connected loads, volume of business, etc.

* * *

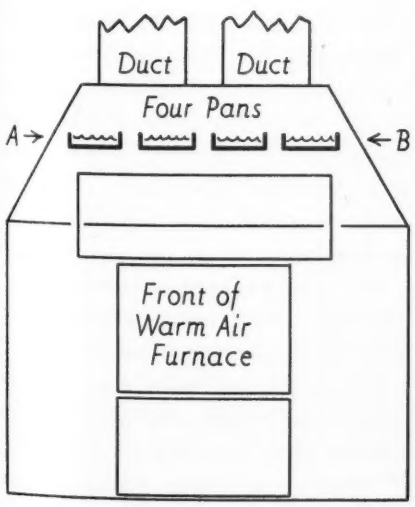
Q. *We know that on ordinary installations this invites over-humidification trouble, but on this big warm air furnace job we will get all the humidification we can by installing the four tailor-made water pans we show. Afraid of blocking too much the air flow through the furnace, what we want to know is a rule to prevent this.*

J. B. O. B., Duluth, Minn.

A. Determine the total area of the supply ducts connected to the top of the furnace. Provide a minimum of 120% of this area for the air to flow through in traveling around the four pans. That is, have the air-flow velocity around the pans slightly lower than the supply duct velocity.



Top View Pans through A-B



* * *

Q. *With a summer-winter hook-up involving forced hot water, suppose there is no chance of pulling down the boiler water temperature by running the circulator. The boiler water is not chilled so much as to affect the domestic hot water. In this case, is it preferable to have the circulator and the oilburner start at the same time when the thermostat circuit closes?*

A. C. W., Coatesville, Pa.

A. If you are keeping the heating boiler hot all the time, at perhaps 150° or 170°, under the conditions you describe it should be just as well to start only the circulator when the room thermostat circuit closes. But if you are using a tank, and a tank temperature control to permit the boiler to chill in summer when the tank is well heated,

For GASOLINE and OIL TRANSPORT SERVICE

MODEL GL-02
Gear Drive (as shown)
Also for Engine Drive
Motor or Belt Drive.

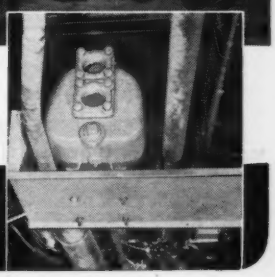
AND HERE IS Why!

This Pump Has: Straight-in-line Suction and Discharge, eliminates friction loss . . . **No Check Valve,** reduces maintenance cost . . . **Positive Self-Priming,** Gorman-Rupp design . . . **Sturdy Helical Cut Gears,** designed to take fifteen H.P. continuously and operates thrust free . . . **Self-lubricating Seal,** dependable and trouble-free . . . **Compact,** requires the minimum of installation space . . . **Most Efficient pump of its kind** . . . Compare these points with any other pump on the market. **There's No Pump Like It.**

Easy mounting on trucks. Unit dimensions most suitable for installations between truck frame and members.

Photo at right—GL-02½ pump mounted on a canopy body truck. Used for aircraft refueling in connection with a hydrant system.

Lower photo—close up view of same installation showing pump attached to truck frame. Note excellent ground clearance.



Ask for Bulletin O-PP-11 and Performance Curves.

Eastern Petroleum Representative:
CHAS. W. M. COOTE CO., INC.
336 Gregory Ave., West Orange, N. J.

THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

then you have to start both the oil-burner and the circulator when the room thermostat circuit closes.

* * *

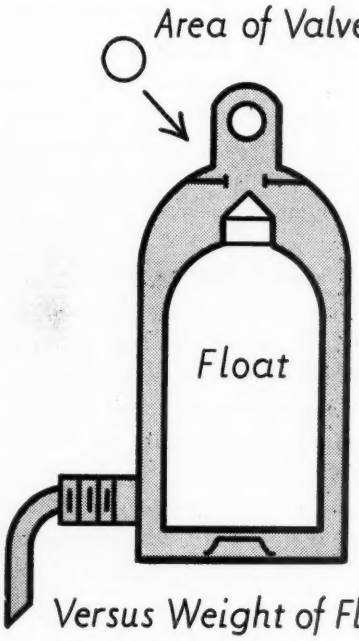
Q. You have recommended setting the steam pressure controls of most domestic steam plants for fairly low pressure, two pounds maximum. Why, and is this important, and in what way?

B. F. C., Jr., Bethlehem, Pa.

A. The recommendation is important for only those unusual domestic steam plants which on coldest mornings develop such high steam pressure as to cause the burners to be started and stopped by their steam pressure, high limit controls.

Drop-away pressures of radiator vent valves is involved. With simple vent valves similar to the one in the drawing, extremely fast venting may result from use of a large valve area, and at pressures above about two pounds the weight of the float may be offset by the valve area. Once closed by steam, the valve "sticks up" when the pressure in it exceeds two pounds. It may leave a radiator partly air-bound because it cannot open again and again to permit additional air, continually collecting in the vented end of the radiator until the radiator is entirely free of air and is steam-filled, to escape while there is relatively high steam pressure in the radiator.

You steer clear of possibilities of "stick-up" trouble, and complications with drop-away pressure, if you arrange domestic steam plants to work at a maximum of two pounds steam pressure. Then you don't have to worry about the maximum steam pressure being higher than is suitable for most modern vent valves.



Versus Weight of Float

It follows that when you encounter a commercial one-pipe steam plant often operated at, say, five to ten pounds steam pressure, you should make certain to use only radiator vent valves suitable for the unusually high steam pressure.

* * *

Q. We have a customer, owning a large garage for storing and repairing trucks, anxious to install some kind of unit to concentrate a blast of warm air in a particular section of the garage or at a particular point where the mechanics might be working on a piece of equipment.

This garage is approximately 100 ft. wide and 200 ft. long. The ceiling is at least 30 ft. high at the sides, and at the top of the pitch of the roof is an additional 15 ft. It is constructed almost entirely of glass and there is no thought of heating the entire building, but

A FLEET OF
COST CUTTERS . . .

Photo Courtesy of Columbian Steel Tank Co.

EQUIPPED WITH BLACKMER TRUCK PUMPS!

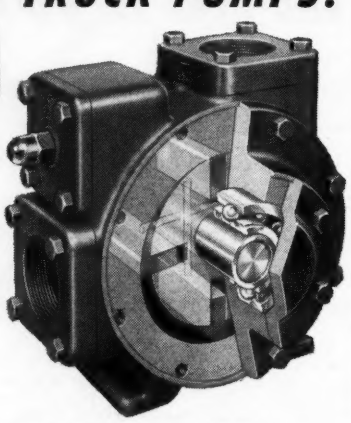
BECAUSE OF THIS CONSTRUCTION

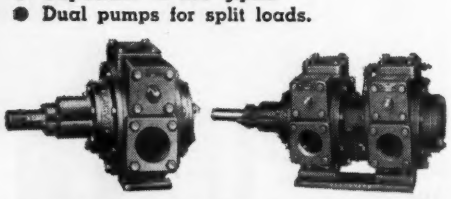
These quiet pumps are self-adjusting for wear—last longer with less maintenance. They save money for users.

Bulk plants are using these pumps to handle every product from Bunker C fuel to aviation gasoline. Owners say "Our Blackmers sure cut costs."

IMPORTANT DESIGN FEATURES

- Nonmetallic vanes.
- Self-priming. High suction lifts.
- Capacities to 200 g.p.m.
- Dual pumps for split loads.





GET THE FACTS •

Maybe your plant can cut delivery costs this way. (They're doing it every day.) Write for Bulletin TP3. . . . . .

BLACKMER PUMP COMPANY • GRAND RAPIDS, MICH.

merely having several units to keep the men warm when they are working in concentrated areas of the garage.

H. F. D., Savannah, Ga.

A. Seemingly you have in mind enveloping the mechanics in a large, slow-moving stream of warm air so that they are working in an atmosphere of 70° air while the temperature of the garage at large is much cooler than 70°. Ultimately most of the heat in this air stream may serve to heat the entire garage, although you design for air circulation that pockets the warm air in the desired location. The warm air directed at the particular location in which the mechanics are working may, however, provide far fewer Btu's per hour than needed to heat the entire garage to 70°, even though you succeed in having the mechanics work in an atmosphere of traveling air which is at 70°. Seemingly you aim in addition to be able to heat any desired part of the garage to 70° to permit the mechanics to work at any location.

If you do not succeed 100% in achieving this type of heating which you describe, this may be because you cannot do the impossible. However, you should be able to provide modern, economical oilheating which is entirely acceptable to the owner, through engineering a layout that includes the best modern oilheating equipment made for such applications as you describe.

Probably you lean towards furnace-duct type heating plants or boiler-type heating plants. If you are furnace-minded, you could install one large furnace of the usual type or the ceiling-hung type, connect this to one or more large supply ducts, and have many supply registers, any of which could be turned on and adjusted to provide heat at particular locations. Again, certain engineers and equipment manufacturers would find in this garage an opportunity to use several ceiling-hung furnaces to excellent advantage. We suggest you check thoroughly on the advantages of using such furnaces for this installation.

If you favor boiler-type heating plants, you might wind up with one large steam or hot-water heating boiler connected to many blower-type unit heaters, any of which can be turned on to heat a particular part of the garage.

We suggest you study the advertisements in FUELOIL & OIL HEAT to obtain names and addresses of manufacturers of suitable equipment.

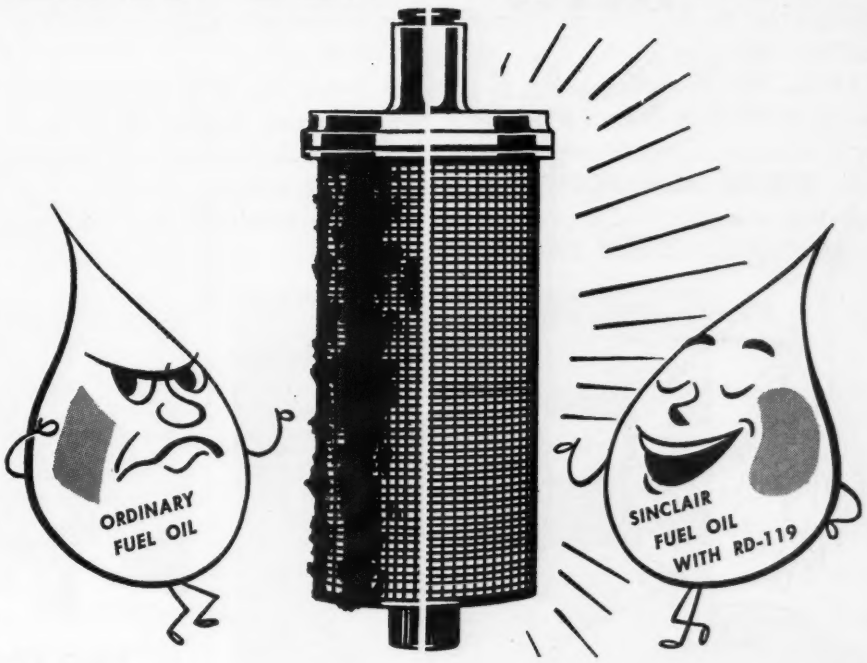
* * *

Q. An unusual case is on hand in which it will be necessary for me to use a flue-pipe as a main heat-transfer area. This job was to use anthracite, but now it seems oil will be used. For coal I felt at liberty to have a flue-pipe nearly 30 ft. long, but doubt I dare do that with oil, though I shall see to having excellent chimney value. How long a flue pipe have you known to operate satisfactorily? What troubles am I liable to run into as the length increases?

F. W. J., Toronto, Ontario

A. This is an unusual installation, but if you have a bit of luck and a few tricks up your sleeve, you should have no trouble with it. You are certain the draft at the boiler or furnace would be sufficient for anthracite. Hand-fired coal requires between .05" and .10" draft over-fire to produce rated output from a boiler or furnace, whereas fir-

How Sinclair RD-119 CUTS SERVICE COSTS



RD-119 Stops Rust—Keeps Customers Happy

With ordinary fuel oil, RUST, caused by moisture condensation, clogs filter screens and burner nozzles. This results in customer complaints, increased servicing costs. But Sinclair Fuel Oil contains RD-119®, Sinclair's miracle rust inhibitor. Used regularly, RD-119 stops rust—cuts service-call expense, helps keep your customers happy. Save money, save trouble with . . .

SINCLAIR
FUEL OIL WITH RD-119®

ANTI-RUST Super Flame ®

ing oil an over-fire draft of what we call a trace (some draft, but less draft than .01") to .03" is sufficient. Therefore with the oilburner running you should have plenty of over-fire draft.

As you do not give details, we will work on probabilities and assume the anthracite would be hand-fired using only chimney draft. We will assume also that you plan to install a pressure burner which fires no harder than 3.5 gph, that the chimney is excellent and can give a maximum draft of .10" at its base, that you are willing to install a smokepipe about 50% larger than is usual for the size of the job, and that the smokepipe is fairly straight (hasn't in it three or four 90° elbows) and slopes upwards continuously from the oil-fired furnace or boiler to the chimney opening. Probably the furnace or boiler does not have long, tortuous flue passages that give high flue gas velocity and high draft drop.

On the basis of all these points, you should worry most about the possibility of pulsation, that is flame pulsation with the burner running normally, or pulsation on starting and stopping.

To cope with this, take these steps:

1. Make certain to install a properly-sloped, gas-tight smokepipe of at least 50% greater diameter than you usually use for an installation of the gph capacity of this job.

2. When you build the firebox, provide two 2" nipples in its front wall. If these are not needed to stop pulsation, you will plug them with refractory material later, after you fire and test the job. If they must be used to stop pulsation, later you will pack them loosely with rock wool, suitably held in place, to prevent escape of soot.

3. Be prepared to install a smokepipe muffler to end any panting or pulsation you encounter. (P. 24 of the book OILHEATING SNAGS, available for $1, shows such a muffler; this book contains several other ideas on pulsation, and on p. 46 shows an installation with a trick smokepipe made up of 32 ft. of 12" smokepipe.)

4. Install a delayed-opening oil valve on the burner, because this reduces a burner's tendencies to give starting and stopping pulsation.

5. If you install a swinging-disc type draft regulator, consider locating it at the chimney end of the long smokepipe to avoid diluting with cool air and chilling the gases in the smokepipe. This is because you design to obtain heat from this long smokepipe, so should keep its temperature high.

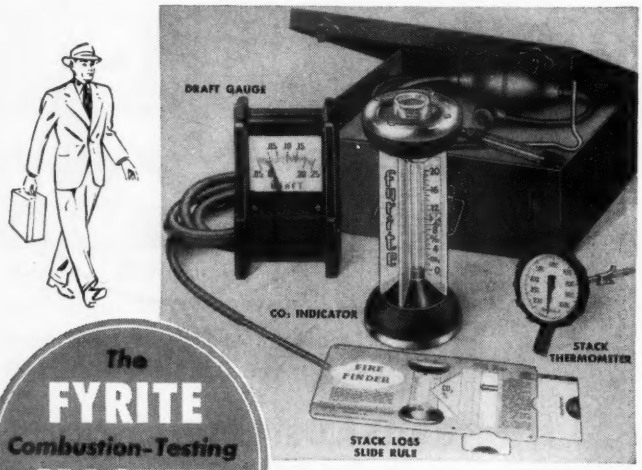
* * *

Q. *With a hot water heating plant using a circulator but not providing hot water on tap as a summer-winter hook-up, is it preferable to have the burner and circulator start together or should the circulator remain idle until the boiler temperature is raised?*

A. C. W., Coatesville, Pa.

A. No important disadvantage comes of starting the circulator simultaneously with the oilburner. True, on cold starts this circulates cold water before the boiler becomes warm. However, it does this only on the few days when so little heat is needed that the boiler is cold when the burner starts.

We are assuming that connecting the circulator motor in parallel with the burner motor will not cause trouble with the motor contacts in the burner control panel, or trouble related to



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Helps You Build Profits and Prestige

Combustion-testing builds business in two ways. First, it boosts service profits because with instruments any service job can be done in less time and by less experienced men. Second, it brings in new equipment business by spotting fuel-wasting burners through a dramatic "fuel-saving" check-up which will convince even the most skeptical customer of the need for replacement or modernization.

Keying your sales and service to fuel conservation will work wonders for you. It will establish you as a "fuel-saving" expert and help you corner an even larger share of immediate and future sales in your community.

The MASTER KIT shown above will appeal particularly to those who want professional implements of highest quality and reliability, as well as of impressive display. The cost of the kit is very small compared to the sales and service profits it will bring you.

Ask your Jobber or Write for Bulletin 733

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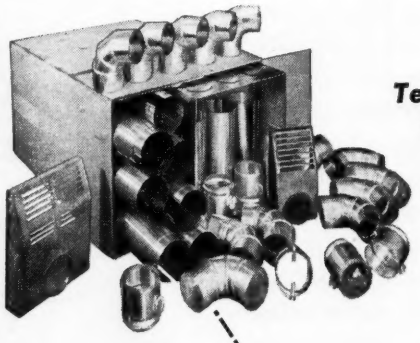


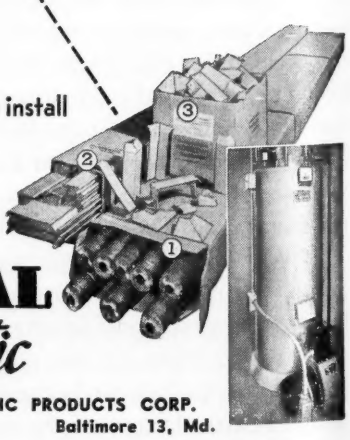
TempRD Air

Quick, easy, profitable warm air installations — with G/A all-in-one package!

TWO ECONOMICAL G/A PACKAGES TO SIMPLIFY YOUR SALES

"FLOORLEVEL" HOT WATER BASEBOARD RADIATION

• The modern way to install hot water heating.



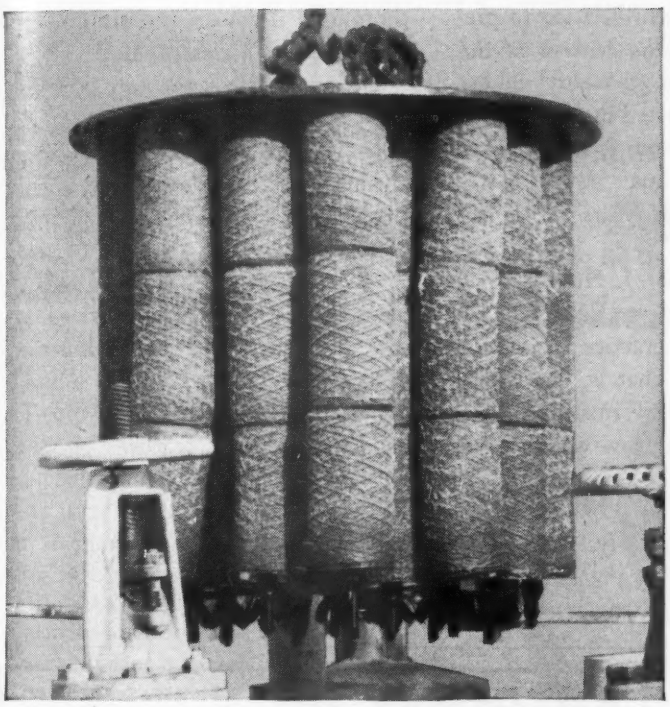
GENERAL Automatic

GENERAL AUTOMATIC PRODUCTS CORP.

2300 Sinclair Lane Baltimore 13, Md.

Photo of a filter . . .

after filtering 30 million gallons



These filtering elements have been in service longer than 12 months . . . have outlasted 30 normal filter changes and are still going!

of SHELL FUEL OIL with FOA-5X!

FOA-5X brings this same freedom from filter clogging to fuel oil customers

THE GIANT FILTER SHOWN HERE is in operation at the loading rack of Shell's Terminal at Sewaren, New Jersey. It is a rather spectacular, though completely line-of-duty, demonstration of the effective action of FOA-5X in preventing clogging of filter screens.

Before FOA-5X became the standard additive to Shell Fuel Oil, it was normal practice to change the cartridges in this filter after each 1,000,000 gallons had been filtered. At Sewaren, however, the same "cartridges" are still in use . . . have never had to be cleaned or replaced . . . are still going strong after filtering over 30 million gallons!

FOA-5X in Shell Fuel Oil brings a basic reduction in expense to dealers in fulfilling their annual oil burner service contracts. Under normal operating conditions, FOA-5X will keep filter screens clean for an entire heating season.

FOA-5X is one more practical accomplishment in Shell's continuing program of Better Oil Heat . . . a program that is benefiting consumer, dealer and burner manufacturer alike.

SHELL

SHELL FUEL OIL *with* FOA-5X

overloading the wiring and dropping the voltage at the motors on start.

On such an installation as you describe, certain perfectionists use special controls that (a) keep the circulator running continuously whenever the boiler temperature remains above a certain point all day, say 110° or 120°; and (b) cause the circulator to keep on running for about 15 minutes after each oilburner "on" period, to make good use of the heat in the boiler when the burner stops.

The (a) feature is gained simply by using a reverse-acting boiler temperature control that runs the circulator when the boiler temperature exceeds 110° or 120°. The (b) feature is gained by rigging up a special control, affected by smokepipe temperature and having a considerable temperature-lag. Wired in parallel with the first control, after the burner stops this smokepipe control keeps the burner running for about 15 minutes, until the smokepipe cools to room temperature. You can make up a special control using an old stack control that has a bimetal helix to open and close a 10-ampere mercury switch. Arrange the mercury switch to close on a temperature increase. Obtain the time lag by slipping a capped pipe nipple over the bimetal helix that goes into the smokepipe. You might have to ask some old-timer in the burner business for an old stack control of the type needed.

* * *

Q. I have been informed that potassium chromate can be used to prevent corrosion of the bottom of domestic fueloil tanks.

It has been suggested that, for a 275-gallon tank, 100 grams of the chemical be dumped in the tank.

My oil tank is 11 years old. Is this good practice?

A. W. J., Hillside, N. J.

A. The procedure you describe is not good, established practice in the oil heating industry. That is, our check-ups fail to obtain information on the subject from companies which, after investigating the effectiveness of the procedure, have gained confidence in it and are using it regularly.

If you do try using potassium chromate, consider dissolving it in water. Use only enough water to dissolve the chemical fully, and pour into the tank.

You may be worrying about sludge, water, sulphur, etc. being present in considerable quantities in the bottom of your tank. If you are worrying about this, check the tank by using a hand pump to draw a sample from the bottom of the tank, or by using some other check-up method, and clean the tank thoroughly if you learn it contains anything but good, clean fueloil.

Do not overlook the fact that some companies specialize in fueloil additives, sludge and water treatment chemicals, etc. which are sold to solve precisely the problem on your mind.

INGERSOLL-RAND, New York 4, N. Y., has printed a well illustrated folder showing the company's line of self-priming centrifugal pumps. The most distinctive feature of these pumps is double volute construction, illustrated in the folder. Application and operation of the pumps is described, and specifications on each model are included.

SKINNER V2-type VALVE

★ relief
★ shut-off
★ drip-eliminator

OUTSTANDING PERFORMANCE & ECONOMY

On original oil burner equipment or for service replacement, new standards of performance are yours with the low-cost Skinner V2 Solenoid Valve! Sturdy steel parts are plated to resist corrosion — compact — weighs only 9 oz. — usable in any position! Soft synthetic seat and seals prevent leakage, and spring loading assures positive operation. There are no brazed, welded, soldered pressure joints, or threaded parts to loosen under vibration. Maximum pressure is 125 P.S.I. — rated at 10 watts max. — Underwriters' approved. Relief model is 2 way, normally open. Drip-eliminator or shut-off is 2 way, normally closed.

Write for details and low prices!

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
141 Belden Ave., Norwalk, Conn.

AUTOCRAT OIL BURNERS

OFFER HEAT PLUS ECONOMY

FOR YOUR CUSTOMERS

with the NEW COMBUSTION HEAD

This famous Autocrat Line is one of the oldest and finest in America. As a Dealer, you can safely recommend Autocrat Oil Burners to your customers. You may promise efficiency, dependability and economy . . . and Autocrat with the new Combustion Head will live up to your promises. Write at once for prices and liberal Dealer discounts.

Manufactured by
CHANDLER COMPANY
CEDAR RAPIDS, IOWA

Manufacturers' Activities

Barnes purchases Atlantic Steel Boiler

JOHN C. BARNES, formerly vice-president of sales, National Radiator Co., has purchased the capital stock of Atlantic Steel Boiler Co. and will be president of the organization, which has been incorporated. William A. Bartley, Atlantic's founder, has announced retirement from the heating industry.

Personnel and facilities of the original company are being retained, with plans prepared for the expansion of activities, partcularly sales representation in new territories. Mr. Barnes described the policy of the company as based upon a conviction that it can continue to earn satisfactory profits "while offering a complete line of heating products at a competitive price." Also, new types of heating equipment are to be introduced "as rapidly as economic conditions permit."

The Atlantic Steel Boiler Co. was founded in 1939 and during the past 12 years has developed a considerable market in the Middle Atlantic area. Plant and offices are located at 22d St. and Washington Ave., Philadelphia.

Detroit Lubricator purchases Site to expand Facilities

PURCHASE of a 75-acre factory site on East Fifteen Mile Road in Sterling Township, Macomb County, Mich., has been announced by Detroit Lubricator Co., Detroit, Mich. This will permit expansion of existing facilities, made necessary not only by the steady growth in volume of existing business but by the addition of new products. Construction of the first of several units to be built on the site will be undertaken as soon as conditions permit.

Detroit Lubricator was founded in 1877—next year marking its 75th Anniversary—and produces automatic controls and specialized equipment for the refrigeration and heating industries, for the Diesel engine field and the armed services. Its main plant is located at 5900 Trumbull Ave., Detroit. Plant No. 2 in Gratiot Township turns out water mixing valves for automatic washing machines.

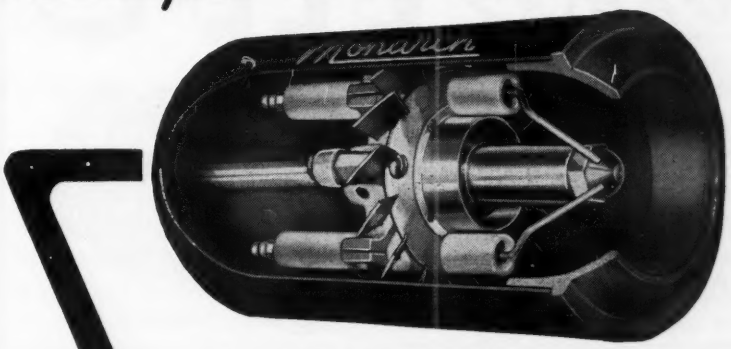
York-Shipley announces Scholarship at Lehigh

ESTABLISHMENT of a scholarship at Lehigh University has been announced by York-Shipley, Inc., York, Pa. An endowment fund to award full tuition scholarships to students entering the college of engineering has been set up at the university, presented by Samuel H. Shipley, class of 1920 and president of York-Shipley.

The scholarships are to be awarded on the basis of financial need, character, personality and scholastic achievements, with preference given to applicants from York County, Pa., who wish to enroll in the mechanical engineering program. First two awards have been received by Paul E. Kline-

.....MONARCH.....

Investigate **THE NEW G81 COMBUSTION HEAD**



The new G81 combustion head will produce just as high combustion efficiency as the G74 head and will burn from .60 to 2.00 gph.

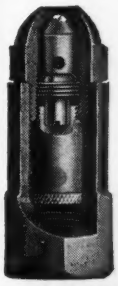
"PLUS" FEATURES OVER THE G74

- Costs half as much.
- As easy to install as an ordinary air cone and stabilizer.
- Simpler in construction.

WRITE FOR INFORMATION

MONARCH BURNER NOZZLES Preferred Because:

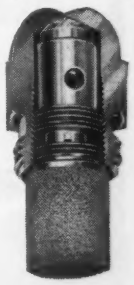
1. Each nozzle is individually tested and checked for capacity against the flow of a calibrated master sample. Capacity tolerances are as low as plus or minus 2½%.



2. Standard nozzles will fire most gun type high pressure burners satisfactorily. (Special series are also available for burners requiring specified spray characteristics.)

New Monarch Porous Bronze Nozzle Filter

The first practical all-metal Nozzle Filter. Rugged and compact. Solid metal to metal contact with Tip eliminates any possibility of dirt getting inside the nozzle between the Tip and Filter. Equivalent to 200 mesh screen, and recommended for use on fractional gallonage nozzles.



Write for Catalog D

MONARCH MFG. WORKS, INC.

2503 E. ONTARIO ST., PHILADELPHIA 34, PENNA.

European Distributor: A. Coutau. Rue de la Scie No. 16. Geneva, Switzerland

dinst of York and Clifford Trout, Neptune, N. J.

Sundstrand begins Addition to Hydraulic Div. Plant

CONSTRUCTION has been begun by Sundstrand Machine Tool Co., Rockford, Ill., on a $700,000 addition to its Hydraulic Div. Bruce F. Olson, president, describes the expansion as two-fold. First, it will increase production on government orders and second, it will segregate the government production from commercial manufacture of pumps and accessories.

The building is expected to be ready by next Summer and will provide 85,000 sq. ft. of floor space, primarily for shop purposes, and will include also 15,000 sq. ft. of office space. One story brick finish steel construction will be used, except for the office space, which will be in a second story over a portion of the building.

While permitting Sundstrand to increase production of its Alternator Drive and other aircraft hydraulic equipment, the new building will enable the company to maintain its position in the manufacture of fuel units and, depending upon available materials, will allow a substantial increase in their production.

Shell opens Terminal in Searsport, Maine

A NEW MARINE TERMINAL, developed by Shell Oil Co. in Searsport, Me., was opened on October 17, with ceremonies that included a luncheon at the Bangor House, Bangor, Me. and a tour of the terminal. Business and civic leaders who were invited went from Bangor to Searsport and back by train.

The new terminal is described as the final stage of a highly coordinated distribution system that begins with oil fields in Texas and New Mexico and includes pipelines, refineries and tankers. The Searsport terminal is not only the newest of the company's installations, but the most northerly in the United States. It occupies an 11.5 acre site on the waterfront and features a pipeline system linking the tanker dock to the plant property, a series of large steel tanks, warehouse, garage, office and loading racks.

The plant has a storage capacity of 8,000,000 gals., with products falling into two categories, the first being such products as gasoline and fueloil, the second, packaged products, such as motor oil and anti-freeze. A public address system provides direct communications between the various parts of the terminal to facilitate coordination of activities, particularly between widely separated points such as the tanker dock and storage tanks, three-quarters of a mile away.

Turb-O-Tube moves Plant to improve Facilities

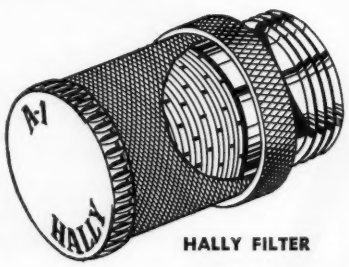
TRANSFER to larger quarters has been announced by Turb-O-Tube Furnace, Inc., Buffalo, N. Y. The firm's factory and offices now are located at 204-208 Rhode Island St., where larger space and additional facilities are available for manufacturing Turb-O-Tube furnaces.

J. W. Carmichael, vice-president, expects the move to enable the company to materially improve services to customers.

Nozzle TIPS

How To Burn Less Than 1 GPH —Without Nozzle Plugging

Service men know that a 200 mesh strainer will not prevent plugging in small capacity nozzles. Why? The nozzle slots are only slightly deeper than the width of screen openings. Foreign particles which work through a 200 mesh screen frequently stick in these slots.
Hally Filters stop foreign particles before they reach the nozzle slots. Tiny metal discs stacked together in the Hally Filter form accurately controlled openings only one-fourth to one-third the size of those in ordinary wire strainers.



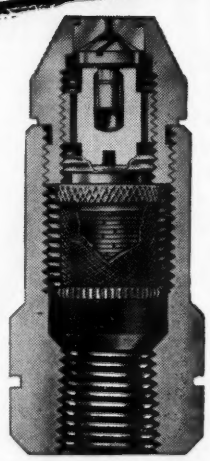
HALLY FILTER

"IT PAYS TO USE DELAVAN NOZZLES"

DELAVAN NOZZLES are individually spray tested. Oil pressure, viscosity and temperature are accurately controlled. DELAVAN testing is your guarantee of absolute accuracy in rate of flow, spray quality and spray angle.

Order Delavan Nozzles with Hally Filters Attached

WRITE FOR CATALOG 147D


DELAVAN NOZZLE with HALLY FILTER ATTACHED

DELAVAN MANUFACTURING CO.
3009 SIXTH AVE., DES MOINES 13, IOWA

OHI

Sundstrand displays Burners; issues Installation Manual

A DISPLAY of its equipment was sponsored recently by the Sundstrand Engineering Co., Rockford, Ill. in the window of the Gas-Electric Building, Rockford, as one of local industries regularly featured. The display featured a Sundstrand conversion burner in the center of the window, with a series of photographs on the right, illustrating manufacturing and assembly line views. Another large photograph showed assembled furnace-burner units, using Sundstrand equipment.

The installation and service manual which the company has developed, contains data sheets on each model in the line, followed by brief descriptions of the function of each component parts. Individual bulletins then cover general installation procedures, with specific data included for tank and piping, thermostat attachment and wiring, combustion chambers, burner setting and testing. A service bulletin deals with common complaints, explaining how each component should be checked and corrective measures

that can be taken.

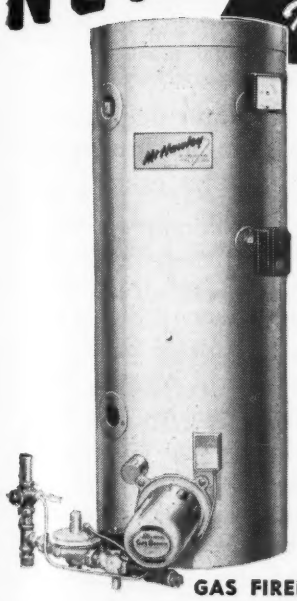
A series of catalogs and service information sheets on Sundstrand Rota-Roll fuel units, standard equipment on the burners, is bound into the manual, along with a complete burner parts price list.

Gulf lets Contracts for Expansion at Philadelphia

INITIAL CONTRACTS have been signed for a major expansion program the Gulf Oil Corp. is undertaking at its Philadelphia refinery. Construction actually got underway on November 1, with the entire project scheduled for completion early in 1953. The Philadelphia project is part of a company-wide 200 million dollar enlargement program begun earlier this year.

Two of the new refining units to be installed at Philadelphia will be the largest of their kind ever built, and, with supplemental units, will increase crude capacity there by 76,140 bbls. per day. First to be built is a 125,000 bbl. per day atmospheric vacuum crude topping unit for the manufacture of gasoline, furnace oil, catalytic charging

NEW! Mt Hawley "BUDGETEER" BOILER BURNER
Ideal for Today's "Small Home" Market



Here's a high quality, space-saving, low cost boiler especially designed to meet EVERY requirement of the ever expanding "small home" market.

Its efficient dimensional design lends itself excellently to either basement or utility room installations.

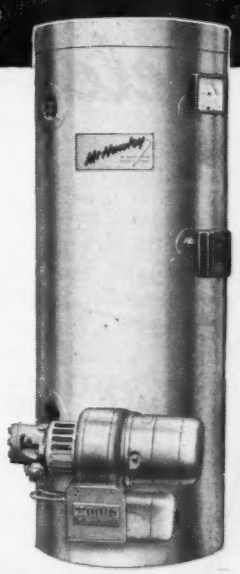
The outstanding new Mt. Hawley "Budgeteer", featuring heavy gauge, slanting tube construction, can be quickly and easily converted from oil to gas or vice versa.

It is available with domestic water coil and has a capacity of 510 ft. of hot water radiation.

Priced right, it is shipped completely insulated and jacketed for quick, easy installation.

Cash in — now — by stocking the new Mt. Hawley "Budgeteer" — the boiler especially designed for the "small home" market!

Complete details sent on request.



GAS FIRED

OIL FIRED

SIMPLE INTERCHANGEABILITY
GAS TO OIL OIL TO GAS
In the matter of minutes, the "Budgeteer" can be changed on the job from oil to gas or vice versa. This flexibility of firing equipment is a feature of interest to architects, engineers, builders and tradesmen alike, as it permits the owner to have the fuel of his choice NOW OR LATER.

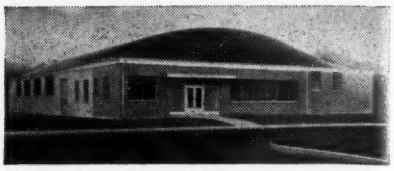
MHM Mt Hawley MFG. CO.
Mt. Hawley Airport, Peoria 4, Illinois

stock and residual fueloil. The second unit is a 63,000 bbl. per day fluid catalytic cracking unit. The world's second largest "cat cracker" is also a Gulf installation at the company's Port Arthur, Texas refinery.

Also to be built is a 10,000 bbl. per day catalytic reforming unit for high quality gasolines and a 40,000 bbl. per day gasoline treating plant. To accommodate the new equipment more than 30 miles of new pipelines will be installed and additional tankage and water cooling facilities will be constructed. A new power plant will make the entire refinery self-sustaining. An office building, workers' locker buildings, refinery laboratory and a new canteen will complete the expansion.

Kresno-Stamm announces broader sales Policies

OPENING of its new 16,000 sq. ft. factory at Palisades Park, N. J. by Kresno-Stamm Mfg. Co., was signalized by an announcement of broader distribution,



Exterior view *of new plant of Kresno-Stamm Mfg. Co. at Palisades Park, N. J., which opened recently.*

sales and price policies by B. I. Stamm, president. The company plans to devote the added production potential provided by the new plant to volume manufacture of its Ball Flame vaporizing and Powrmatic pressure oilburners.

Mr. Stamm explaining the new policies, emphasized that the custom manufacture of burners for leading furnace manufacturers would continue to be a major part of the company's business. With the added production capacity, he continued, "We will now make our precision-built oilburners available for the conversion market through qualified dealers."

The new plant is ready to make immediate delivery of parts as well as complete units and the company's field engineering staff is available for consultation. Rounding out the program of expansion is a vigorous advertising and promotion campaign through newspapers, direct mail and trade magazines. Present emphasis of the campaign is to notify builders that the Ball Flame burner is a "natural for the low-cost small homes market."

National Radiator dedicates new Plant at Duncansville

A NEW SHEET METAL PLANT at Duncansville, Pa., erected and equipped at a cost of more than a million and a quarter dollars, was dedicated on October 18 by National Radiator Co., Johnstown, Pa. Located in the greater industrial district of Altoona, Pa., the plant has a main building 260 ft. wide by 460 ft. long, occupying more than 130,000 sq. ft. on a 15-acre plot.

Ceremonies included a press luncheon held at the Penn-Alto Hotel, Altoona, with National Radiator officials in attendance. Chartered buses took the guests after lunch to Duncansville, five miles away, where the formal dedication took place. Benjamin F. Fairless, president, United Steel Corp., was principal speaker, after which guided tours were conducted.

Felco OIL BURNER IGNITION TRANSFORMERS

The test of the best is performance and that's what you can depend on from *FELCO* Oil Burner Ignition Transformers. They are manufactured in accordance with standards set forth by the NEMA and approved by UL. *FELCO* Transformers are of quality design and sturdy construction guaranteed to give trouble-free performance. For top value always specify *FELCO*.

MEMO
SALES TERRITORIES STILL AVAILABLE FOR JOBBERS
WRITE TODAY

Write Today... **send for descriptive and technical information and prices on *FELCO* Transformers.**

THE FOREST ELECTRIC COMPANY — F E FELCO C O

Forest Electric Company

7216 Circle Drive • Forest Park, Illinois

The plant will be headquarters for the fabrication of jackets for National Radiator heating boilers, convectors and convector enclosures, baseboard radiation and other sheet metal items.

Viking names Judges to pick Name for new Blower

THREE WELL-KNOWN HEATING MEN have been named as judges to select the best name submitted for the new 7" direct-drive blower package announced by Viking Air Conditioning Corp., Cleveland 2, Ohio. The panel consists of George Boeddener, managing director, National Warm Air Heating and Air Conditioning Association; I. E. Seith, sales manager, Niagara Furnace Div., Forest City Foundries Co. and E. L. Wyman, executive secretary, National Heating Wholesalers' Association.

Heating personnel were invited to submit a name for the new package, tentatively called the "777," because of its 7" wheel, 7-speed transformer and 700 cmf capacity. The blower delivers filtered, circulated heat with any gravity furnace up to 70,000 Btu output, measures only 24" high and 20" square. Contest closed October 31, with the winner slated to receive a Polaroid Land camera. Entries were submitted on postcards.

Water Treatment Co. enters domestic Field

WATER TREATMENT CO. OF AMERICA, Pittsburgh, Pa., one of the oldest producers of organic boiler water treatments for large industrial boilers, has announced the development of a new all-organic water treatment formula for domestic and commercial heating boilers and is entering the heating field distribution. Harry L. Baer, president, explains that the major part of the formula's national distribution will be conducted through the warehouse chain of the American Radiator and Standard Sanitary Corp., but selected territories still are being franchised to distributors or jobbers whose coverage does not conflict. Some of the franchises may be permitted to sell under private label.

The product, to be retailed under the "Baerite" brand, is the first packaged product the company has offered. The formula is described as a fluid consisting of organic concentrates, having the ability to cleanse an entire heating system of collected scale and rust and inhibit further formations.

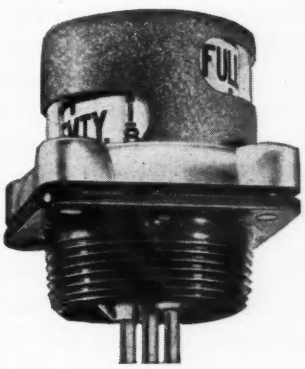
Maid-O'-Mist adds two sales Representatives

APPOINTMENT OF two additional sales representatives for its line of humidifiers and heating specialties has been announced by Maid-O'-Mist, Inc., Chicago 41, Ill. Paul Thompson & Co., Philadelphia, has been named for the eastern Pennsylvania, Delaware and southern New Jersey territory, with the S. R. Quincy Co., Dallas, Texas, covering eastern Texas.

Dealers from every State attended Coleman School

A TOTAL of 1,200 dealers have taken part in the first year of the dealer training program being conducted by

"WE'RE SOLD ON Rochester GAUGES!"



"Rochester 'Dual-Dial' Oil Gauges have been our 'stand-by' for years. After long periods of use we find our records show no service charges for gauges. This means better customer relationships and economical operation."

Earl L. Kunkle

EARL L. KUNKLE, R. L. Stott Company
Oil Burner Sales and Service
Philadelphia, Pa.

The R. L. Stott Co. has been serving three heavily populated Pennsylvania counties for over 25 years. Experience has sold them on the complete dependability and positive leak-proof feature of Rochester "Dual-Dial" Oil Tank Gauges. They know these gauges can't leak oil or vent fumes, even under pressure. As a result customers are satisfied. Costly service calls are eliminated. What's more the large, magnetically actuated "Dual-Dial" is easy to read from both front and back—indicates the oil level at a glance.

Ruggedly built, easy to install Rochester Gauges have been Underwriters' listed for over 25 years. Stocked by leading wholesalers for basement oil burner storage tanks in the following depths—22", 24", 27", 42", 44", and 47"; 1½" and 2" pipe thread connections. Special lengths to order . . . STOCK UP NOW. Rochester Manufacturing Co., Inc., 19 Rockwood Street, Rochester 10, New York.

ROCHESTER MANUFACTURING COMPANY, INC.
DIAL THERMOMETERS GAUGES AMMETERS
ROCHESTER DEPENDABLE ACCURACY GAUGES

HERE GOES OUR LAST
Klemm FUEL OIL FILTER
CALL OUR JOBBER QUICK!

YOU, TOO, CAN MAKE EXTRA EASY SALES WITH KLEMM FUEL OIL FILTERS NOW

When serving your customers with Fuel Oil or cleaning their oil burners be quick to suggest a Klemm Fuel Oil Filter. Klemm Filters remove water, rust, and sediment of all kinds from oil . . . helps step up heating efficiency. Get a supply of Klemm Oil Filter units from your jobber TODAY. See for yourself how easily customers can be sold this highly profitable item.

Klemm Oil Filters remove all water, dirt, sediment, rust, and all foreign matter from fuel oil . . . help make customers happy with the oil you sell. Metal bowl units listed Underwriters' Laboratories. All sizes available for every filtering need.

ORDER A SUPPLY FROM YOUR JOBBER TODAY

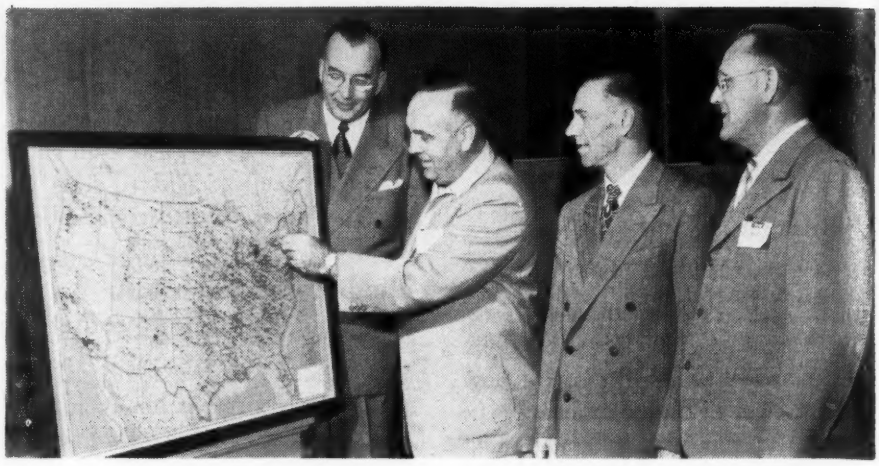
SILENT SALESMEN

Packed 12 to a carton, Klemm JR model oil filters take little counter space yet do a BIG job of selling themselves. Customers are attracted TO and buy direct FROM this attractive display carton.

Millions Since 1932

Klemm

AUTOMOTIVE PRODUCTS CO.
1718 N. Damen Ave., Chicago 47, Ill.



The Coleman Co., Wichita, Kan., which is planned to continue for five years and afford 8,000 retailers of home heating equipment a combination factory visit, installation and service school and sales clinic. The school was closed in September after 30 weekly sessions during which a Coleman dealer attended from every state in the Union, from Canada and Mexico. Classes will be resumed in January.

In the photograph, which was taken at the end of the last class this year, another pin goes into the map that shows the localities from which the dealer-students came. Sheldon Coleman, president, The Coleman Co. is at the left, with William Enders, Enders Furniture Store, Oneonta, N. Y.; Frank Wolfe, York Supply, Dayton and Richard DeGroot, Modern Home Store, Rock Rapids, Ia., with him.

Sims issues current oilburner Parts Catalog

A 1951-52 CATALOG has been issued by Sims Corp., Providence 9, R. I., wholesale distributors of boilers, radiators, heating specialties, oilburner supplies and service parts. It includes descriptions, specifications and price information on all the items contained in the catalog and permits a dealer to figure the cost of an oilburner installation or a complete heating job from the material reproduced in the book.

Mack Trucks starts Building in Bridgewater Township, N. J.

HIGH LEVEL government participation and national attention for a program of vital concern to the trucking industry marked the dedication of its new Mack Service Parts Div. building in Bridgewater Township, N. J. by Mack Trucks, Inc., New York, N. Y. The new location is 9 miles away from the company's nearest manufacturing plant and away from congested industrial and traffic areas. As such, the new building was hailed as a symbol for the concept of industrial dispersion.

Speakers at the ceremonies included Brig. Gen. William L. Barriger, chief of staff, First Army; James A. Garrison, deputy assistant administrator, Federal Civil Defense Administration and Presley L. Lancaster, Jr., deputy director, Industrial Dispersion Task Force of the National Security Resources Board.

E. D. Bransome, president and chairman of the board of Mack Trucks said the company picked the location with the Government's industrial dispersion policy in mind. The plant, he said, was far from any high industrialized area and was not even on a railroad siding. Mr. Bransome placed in the cornerstone a letter addressed to the "Citizens of the Year 2001," which expressed the hope that by the 21st century the country would have learned how to build its way out of traffic jams and develop an adequate highway system.

McDonnell using combination service Chart and price List

WHOLESALERS and the company's own field men have been furnished with pocket-sized combination service charts and price lists by McDonnell & Miller,

Inc., Chicago 18, Ill. Dealers and contractors discounts and net prices for boiler feeders and feeder cut-off combinations, low water fuel cut-offs, safety relief valves and hot water heating boilers, water tanks and heaters appear on yellow cards. Similar price information for wholesalers is carried on a pink card. Both types are covered with clear Vinylite.

The reverse side of the cards contains a Service Chart, shows ratings, maximum steam pressures and McDonnell products to use on handfired and automatically fired boilers, along with comparable information for hot water heating jobs.

Swirling Flame prepares Manual and Literature

AS PART of a complete set of sales helps being readied for its dealers, the Swirling Oil Burner Mfg. Co., Long Island City, N. Y., has issued an installation and service manual on models A-1, A-2 and A-3 Swirling Flame oilburners, along with three pieces of consumer literature. The literature outlines the advantages of the vertical nozzle used with the company's high pressure atomizing burner, stressing overall efficiency and lower purchase cost, attributed to the elimination of the necessity to build a combustion chamber. The literature employs clever cartoon and photographic illustrations to explain its theme.

The installation manual represents an effort to arrange systematically the contents so that each step follows in logical sequence. It features a series of fold-outs, containing an illustrated parts list, working diagrams of the burner, electrical wiring diagrams and tank installation drawings. Included in the manual are descriptive data sheets and catalogs on the component parts that are used on Swirling Flame oilburners.

Sid Harvey distributes new burner parts Catalog

THE 1951 EDITION of "Sid Harvey's News," annual catalog of replacement parts for automatic heating issued by Sid Harvey, Inc., Valley Stream, N. Y., has been distributed to the trade. This year's copy is the 20th Anniversary Edition, contains 226 pages and reproduces 1,500 illustrations of replacement parts for stokers, gasburners and oilburners.

The catalog was designed to give accurate finger-tip information to organizations confronted with problems of installing and maintaining automatic heating systems. All makes and types of each accessory that Harvey offers are grouped together for convenient reference, accompanied by technical data, including capacities, characteristics and features. Trade prices are included.

Trailmobile establishes Branch in Birmingham

A FACTORY BRANCH has been established in Birmingham, Ala., by Trailmobile, Inc., Cincinnati 9, Ohio, manufacturers of commercial truck-trailers. W. C. Griffin of Birmingham has been named branch manager.

The company since 1950 has been operating its Birmingham sales activity as a sub-branch under Atlanta, Ga. Mr. Griffin joined Trailmobile in 1949, employed as a resident salesman in Atlanta until the establishment of the Birmingham sub-branch, where he has been located since.

Thatcher Circular on Oilmaster Boiler

A THREE-COLOR, 4-page circular has been prepared by the Thatcher Furnace Co., Garwood, N. J., on its Oilmaster boiler. Included are engineering data and capacities for 6 models, with net I-B-R ratings ranging from 350 to 850 sq. ft. of steam, 645 to 1510 sq. ft. of hot water radiation. The specifications also list recommended oilfiring rates, chimney sizes and dimensional information.

Inner pages of the circular describe the features of these cast-iron boilers, and employ a cut-a-way photograph that shows interior construction and arrangement of parts and illustrates flue gas travel through the unit. Reproduced also is a picture of the gun type burner that fires the boiler, one of the boiler sections, showing the extended fins for added heating surface and an exposed view of an installed tankless heater. Storage type heaters also can be furnished.

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34 years of experience making fine pumps and meters. Years of learning the needs of the petroleum industry and how to fill them. That's what we have to sell. We sell it in the compact form of Granco pumps and meters!

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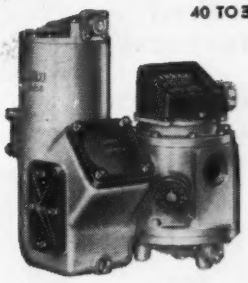

Compact and fast, Granco Meters have an accuracy and dependability that only specialized experience in meter design can attain.

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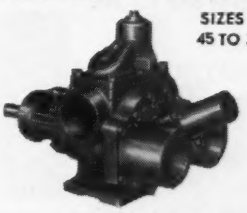

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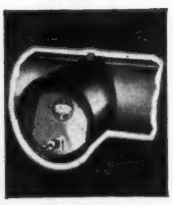
BAROMETRIC CONTROLS

for automatic heating plants



FIELD TYPE M, first and finest for all types of automatic heating plants.

for hand fired furnaces

FIELD BAROCHEK, combination check damper and barometric draft control.

for stoves

FIELD R series and "SCOTTY", pre-set or adjustable, to bring out the finest in stoves and ranges.

for water heaters

FIELD RNA-W, pre-set precision made, the finishing touch to a fine water heater.

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IN BETTER HOMES & GARDENS

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AFFILIATES:
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Cranes - Hoists

Book Shelf

Fuel Oil Manual is authoritative Study

THOSE WHO BUY, use or sell fuel oil for heat-treating, building heating, power generation or marine applications, will find much of value in Fuel Oil Manual by Paul F. Schmidt, chief chemist, Allied Oil Co., Inc.

Technical language is used as little as possible, and theory and involved discussions of interest only to chemists or refiners are avoided.

Covered in this book are complete data on the properties of fueloil, the possibilities and limitations of each grade of oil, methods which can be used to assure uniform quality and efficient combustion, how to diagnose fueloil troubles and how to remedy them, and particularly important, how to get maximum value from each fuel-oil dollar. Under Troubles and Remedies are listed 22 of the common fuel-oil troubles, their symptoms, and the remedy to follow in each case.

The text, which includes 34 tables, is divided into 24 chapters covering chemistry of petroleum, petroleum refining processes, grades and types of fueloils, gravity, heat of combustion, viscosity, water and sediment, carbon, ash and salt residue, flash and fire points, pour point, sulfur, color, distillation, preheating of oils, sampling storage tanks, stability of fueloils, fuel-oil treatments, reclaimed fueloils, blending of oils, transportation and storage, fueloil specifications, and complaints and causes of troubles.

Fuel Oil Manual, by P. F. Schmidt. Fabrikoid bound, 6 x 9 inches, 160 pages. Published by The Industrial Press, New York. Price, $3.50. Canadian or overseas postage 40¢. Order copies from FUELOIL & OIL HEAT, 232 Madison Ave., New York 16, N. Y.

❖

Sam Littlejohn has been elected commercial vice-president, General Electric Co. Formerly manager of the Atlantic district of the company's apparatus division in Philadelphia, Littlejohn, will be engaged in customer relations activities from Cleveland.

Readers' Forum

"X" LABORATORIES, INC.
New York 19, N. Y.

Editor:

I just happened to see a copy of the Cleveland Trust Company Bulletin of August 16, 1951 in which they mentioned that the 1950 Census of Housing, released in June by the Bureau of Census shows that:

96% of the homes have radios
94% of the homes have electric lights
91% of the homes have refrigerators
85% of the homes have kitchen sinks
50% of the homes have central heating
12% of the homes have television.

This would seem to indicate that we people in the plumbing and heating business are not doing quite the job we should on kitchen sinks, and central heating.

I have often thought that we should form a sort of association and hire women lecturers to talk before women clubs and farm organizations and things of that kind and go after more business in the plumbing and heating line.

Possibly national advertising in the magazines that reach the suburban area would be advantageous. I know the electrical appliance people do a wonderful job in the above line. I could do without a radio much easier than without a kitchen sink or central heating.

E. R. TOLFREE, *President*

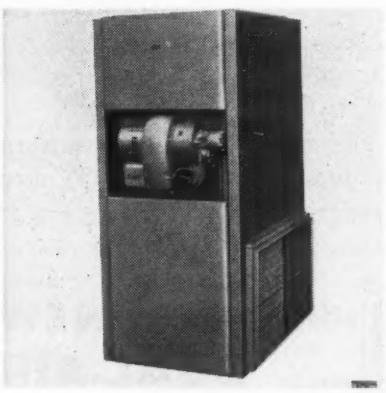
❖

John Evon Nelson, formerly a director and executive vice-president of the Gulf Oil Corp., died suddenly at his home in Pittsburgh on October 6. He joined the company in 1908 as secretary to W. L. Mellon and assistant treasurer. In 1922 he became treasurer and vice-president and treasurer in 1939. Two years later he was elected executive vice-president and held that position until his retirement in June 1949. He is survived by his widow, Margaret Dodds Nelson; three sons, one daughter and four sisters.

New Products

Coleman adds Furnaces with gun type Burners

TWO ADDITIONS to the Coleman line of forced warm air furnaces for Blend-Air or conventional duct systems are fired with continuous ignition gun type oilburners. Output ratings are 100,000 and 80,000 Btu/hr. Features include



heavy one-piece welded steel combustion chamber, direct drive blower unit acoustically treated for quiet operation and filter frame which may be installed on either side or in the bottom of the furnace.

The furnace's compact design lends itself to installation in utility rooms, closets or alcoves, dimensions of the larger model, 194, being 24¾" wide, 35¼" deep and 58⅝" high. The smaller model, 193, measures 24¾" wide, 30¼" deep and 58⅝" high. Casings are sealed to meet static pressure requirements of Coleman's Blend-Air heat transmission system.

Made by: The Coleman Co., Inc., Wichita 1, Kan.

S. O. S. Odorout for oil Spills and Leaks

S.O.S. ODOROUT has been announced, designed to stop fueloil odors caused by spills, stains, leaks or tank overflow. In addition, it removes most oil stains. Odorout is packaged in 1 lb. shaker cans and is used by shaking out the powder on the oil spill. If the location is inaccessible, the powder may be diluted with water and poured or sprayed.

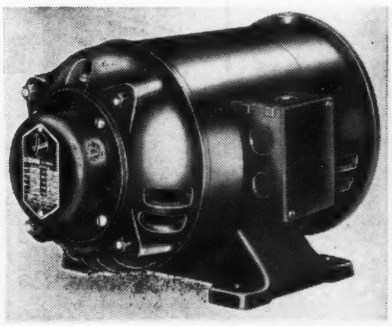
The powder is described as odorless, non-inflammable, non-corrosive, non-volatile, non-toxic and non-irritating.

Made by: S.O.S. Products Co., Inc., 282 Nassau St., Brooklyn 22, N. Y.

Hoover introduces Line of "C" face-mounted Motors

HOOVER recently has introduced a line of NEMA "C" face-mounted, integral hp motors, built in standard NEMA frames. The units are offered in single phase, integral hp ratings through 3 hp, 3450 rpm, and in polyphase, integral hp ratings through 5 hp, 3450 rpm.

Two basic varieties are available: Horizontal, as shown in the photograph; vertical, similar to horizontal models except without a mounting base and equipped with a canopy. Both are drip proof, equipped with



heavy-duty ball bearings and suitable for continuous-duty operation.

Special features include, on the single-phase units, a totally enclosed dust-proof, dirt-proof external switch housing and condensers mounted within the motor base.

Made by: The Hoover Co., 68 Brook Ave., North Plainfield, N. J.

Viking "777" is seven-speed Conditioner

THE VIKING "777" is a 7", 7-speed direct-drive winter air conditioning unit, designed for homes up to 7,000 cu. ft. volume. The unit operates with furnaces of 42,000 Btu/hr capacity, or

86% NOW USE Guardian COUPLINGS

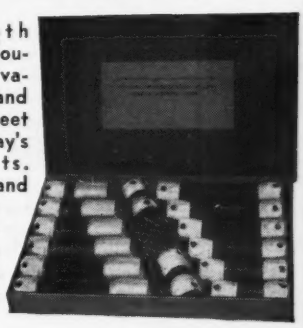
New Extruded Splined Type Guardian Flexible Coupling

Regular set screw type

Yes . . . 86% of the nation's original equipment manufacturers of oil burners in the United States are using Guardian flexible couplings. This enviable position was earned through dependability, quiet operation and long life in millions of installations. Specially treated for oil resistance . . . nothing to lubricate . . . nothing to get out of order . . . easy to install. Guardian Flexible Couplings are available in the regular set-screw type and in the new extruded splined sleeve design, fitting the hub with a close .001 inch tolerance. Both types are supplied in a variety of standard sizes or to your specifications.

COMPLETE ASSORTMENT SERVICE KIT

Contains both types of couplings in a variety of sizes and bushings to meet 97% of today's requirements. Keep it filled and be ready to make the extra profits on flexible coupling replacements.



WRITE FOR BULLETINS on the Guardian line of valves for water, oil heat and radiant panel installations.

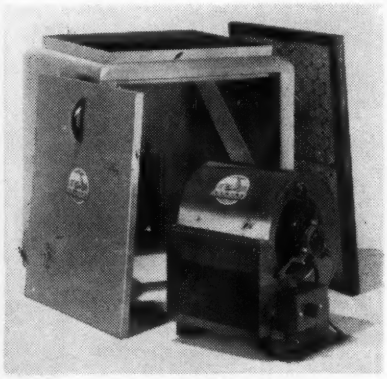
Guardian PRODUCTS CORP.
COUPLING DIVISION

Dept. F-111, 1215 E. Second St., Michigan City, Ind.

Michigan City, Indiana

less, is equipped with 1/10 hp. motor, developing from 650 to 1100 rpm. The "777" is only 24" high and 20" square and is equipped with standard full-size 440 sq. in. filter.

A rheostat selector permits operation of the unit at selected speeds between 250 to 700 cfm, without mechanical adjustment. Used with standard controls the "777" can supply the



same elements of winter air conditioning, as its larger counterparts in the Viking line.

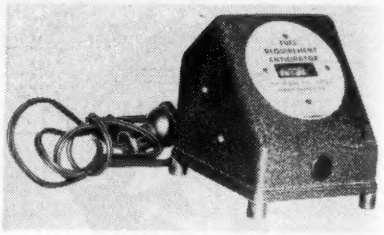
Made by: Viking Air Conditioning Corp., 5601 Walworth Ave., Cleveland 2, Ohio.

Bressler System for fueloil Deliveries

THE BRESSLER Fuel Requirement Anticipator, a system for planned fueloil deliveries, consists of a heat measuring unit and a heat recording unit, illustrated. The measuring unit is installed on the roof, or in some other exposed location, of the dealer's office and transmits to the recording unit heating loads as reflected by weather changes. The measuring unit is wired to 110 volt supply line and to the recording unit, which is housed in a metal case 5" square and 5" high.

From the points registered on the recorder a factor is established for each customer. By computing the gallonage required to restore the customer's tank to a full condition and dividing it into the number of points accumulated between fills, the number of points per gallon consumed is determined. Then, multiplying the desired fill by the points per gallon, a permanent factor is arrived at, which remains constant unless a larger storage tank is installed or the burner is replaced with one of different capacity or efficiency.

Made by: Bressler Engineering Service, Oregon, Ill.



Airguide industrial humidity Indicator

AIRGUIDE NO. 605 humidity indicator has been designed especially for industrial use, but may be employed anywhere where there is a necessity for keeping constant and accurate check on the relative humidity. The instrument measures air-moisture directly and registers humidity from 0 to 100 per cent. Suitable for continuous use at high humidities, the No. 605 will operate in temperatures as high as 175° F.

The direct reading instrument measures 4⅝" in diameter, 1½" deep.

NEW! "HANDBOOK OF OIL-BURNING"

the most authoritative text ever compiled on Oil-Burning

• Information about oil burners, combustion, atomization, vaporization, crude oil, fuel oil, refining, transportation, delivery systems, heating, heat losses, tanks, piping, combustion chambers, controls, wiring and other subjects. Over 950 pages of facts and data, more than 500 illustrations, some 90 tables and charts.

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JUST LOOK AT THESE SUBJECT TITLES COMPILED BY 48 TOP MEN IN THEIR FIELDS

I Oil As a Fuel
II Combustion of Fuel Oil
III Preparing Oil for Combustion
IV Oil Burning Equipment
V Elements of The Heating System
VI Controls
VII Selection of Equipment
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IX Standards

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Only 34" deep, NO GROUND CLEARANCE NEEDED!

Oran's amazing, new Dual-Air vaporizing burner is one of the greatest advancements ever made in vaporizing-type burners. This unique unit burns smoke-free, even under adverse draft conditions, with oil savings up to 15%!

There are four Oran Shallo-Well models for small homes, to meet climatic conditions anywhere in the nation.

- 50,000 BTU output—Natural draft
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- 65,000 BTU output—Forced draft
- 75,000 BTU output—Forced draft

WRITE US TODAY FOR COMPLETE INFORMATION ON THESE UNIQUE SHALLO-WELL OIL-FIRED FLOOR FURNACES!

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Authorized Fuel Unit Service Station

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CRESCENT PARTS AND EQUIPMENT CO., INC.

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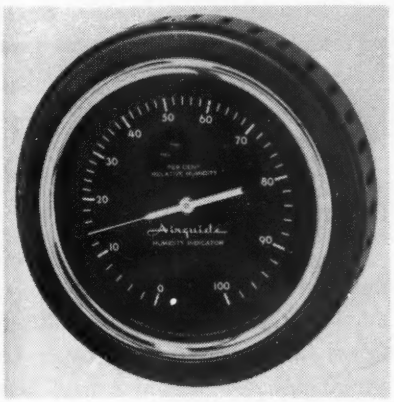
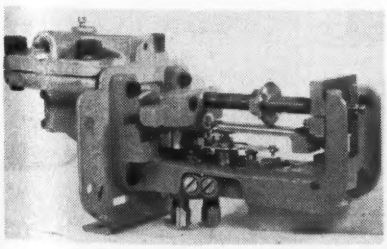


It has a convex crystal, black metal dial with easily read numerals and a white indicating hand. No. 605 indicator is designed for wall-mounting.

Made by: Fee and Stemwedel, Inc., 2210 Wabansia Ave., Chicago 47, Ill.

Brown Transmitter for controlling liquid Flows

A DIFFERENTIAL CONVERTER, compact and lightweight transmitter, designed for more sensitive measurement and control of fluid flows in industrial processes, has been developed by Minneapolis-Honeywell's Brown Division. It has an adjustable range from 0-20 to 0-200 ins. of water differential pressure with no change of parts. Field calibration is possible by use of scale-type weights.

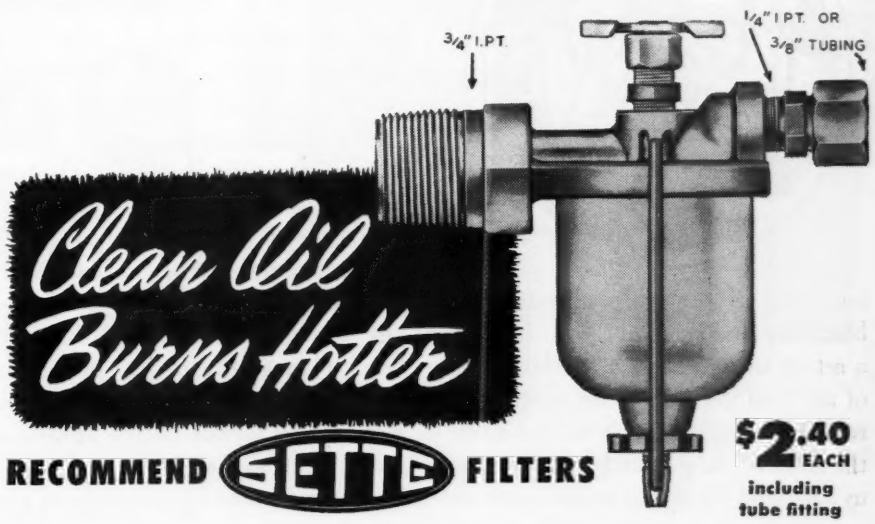


The converter is operated on a pneumatic-balance principle without mercury, using an accurate weigh-beam system in which the differential pressure is continuously balanced by pneumatic pressure. This pressure becomes a measure of fluid flow and is connected to a recording or controlling instrument.

Made by: Minneapolis-Honeywell Regulator Co., Brown Instruments Div., Wayne & Windrim Aves., Philadelphia 44, Pa.

Turbulator is Standard on Silent Flame Burners

THE COMPLETE LINE of Silent Flame gun type oilburners, comprising 14 models with capacities ranging from 0.75 to 30.0 gph, now is shipped with



Clean Oil Burns Hotter

RECOMMEND SETTE FILTERS

$2.40 EACH including tube fitting

SETTE Drum and Tank Filters remove dirt, scale and water...filter out impurities...assure free flowing, clean burning oil. Reduce fuel bills and virtually eliminate burner maintenance! Burner owners can avoid the stubborn job of cleaning furnaces. Never again need they worry about gummy tanks, clogged fuel lines... or be without heat just when it is needed most.

SETTE Filters are simply owner-installed and take only minutes to clean. The low price is returned many times over in operating efficiency and reduced maintenance.

More Sales! When burner owners learn they can filter their oil and forget the work —sales soar! Make certain your stock of SETTE Drum and Tank Filters is complete for peak season ahead! Build customer confidence—and profits—order today! If your Jobber cannot supply you, order direct. Shipped postpaid, 40% discount in doz. lots.

MARQUART MANUFACTURING COMPANY

Manufacturers of the famous SETTE Self-Closing Barrel Faucet

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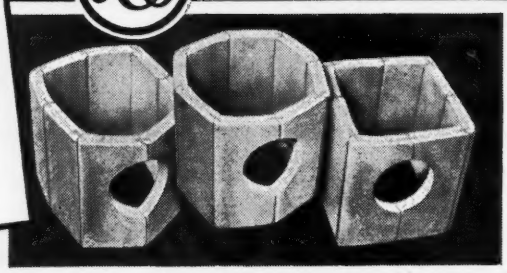
CHOOSE YOUR SHAPE for Any Style Furnace or Burner

from ONE Complete – Convenient Carton

R&I COMBUSTION CHAMBER



- *Easy to Handle and Install*
- *Fast Heating • Quiet • Efficient*
- *Gives Up Stored Heat Gradually*
- *One Safe Package Has Everything for Any Shape Chamber*

Many thousands of these better quality, longer lasting R & I Refractory Chambers are giving real customer satisfaction. Your supply house has them. Try them—and save on installation costs.

Write for Free Copy of "Better Combustion Chambers"

REFRACTORY & INSULATION CORP. • 116 Wall Street • New York 5, N. Y.

. . . . New Products

a new improved "Dual" telescopic turbulation device as standard equipment. The turbulator is not a combustion head, but instead offers free air passage through the blast tube, has no moving parts and requires no adjustment.

The turbulator delivers air for combustion through the center ring of the blast tube and through the medium of a set of vanes delives a swirling flow of air from the sides of the tube. As a result combustion air is ejected from the front of the gun and from its sides to surround the flame in the combustion chamber. A venturi combustion head is also available separately.

Silent Flame maintains its own foundry and machine shop and makes many of the burner components, including castings and transformers, as well as the turbulator and combustion head.

Made by: Silent Flame Mfg. Co., Inc., 807 Zerega Ave., New York 61, N. Y.

All-steel Multi-Vise is versatile Tool

THE MULTI-VISE is all steel, weighs but 28 lbs., and can be carried easily from one job to another. Three models can be furnished, each guaranteed unconditionally against breakage. The vise has a 360° vertical swivel, a horizontal swivel or a double swivel, with both horizontal and vertical swivels.

An outstanding feature permits the vise to be removed easily from its bench plate and carried to another location. Some firms have a bench plate mounted on service trucks, as well as in the shop, so that one or two Multi-Vises can be used for a variety of jobs in different locations. The tool has removable, replaceable, reversible jaws, capacity 6" square and 5¾" round.

Made by: American Implement Co., 2523 Taylor St., Omaha, Neb.

Radiation adds Furnaces for small home Market

MODEL 80 furnace units have been added to the Radiation line and are offered in counterflow, Hiboy or Loboy models. Units, which have been designed for the small home market, may be gas or oilfired, with the burners interchangeable. Model 80 has the conventional single wrap-around heat exchanger and a full cabinet. It is shipped with a high pressure gun type oilburner or gasburner, all controls, draft regulator, rubber-mounted blower, humidifier and refractory.

Oilfired Hiboy or Loboy models are rated at 95,000 Btu/hr. at the bonnet; counterflow units deliver 85,000 Btu/hr. at the bonnet. The burner is equipped with a .85 gph nozzle.

Made by: Radiation Furnace Corp., Benton Harbor, Mich.

ARE YOU SURE . . .

. . . That you understand how modern accounts receivable financing works?

Under the Lexington Plan the Borrower need not pledge all of his receivables; need not borrow more than he requires; pays only on what he owes. The Plan is good only for the growing and not for the ailing business.

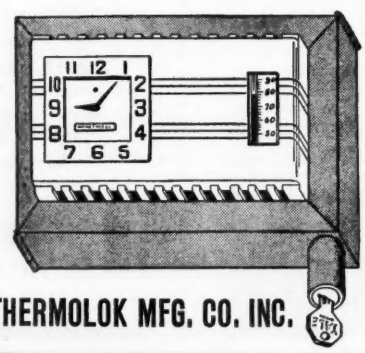
LEXINGTON CORPORATION

Fuel Financing from Maine to Maryland

M. S. LURIO, Pres.

10 Milk St., Boston, Mass. 60 E. 42d St., New York, N. Y.

It's Here! —the New THERMOLOK



Guards Thermostat Settings

EASY TO INSTALL

- No nails or screws.
- No heat lock.
- No holes in wall.
- 15 seconds to install.

ALL MODELS AVAILABLE

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It's REXOIL for...

Fewer Service Calls...

More Profit...

Complete Factory Cooperation

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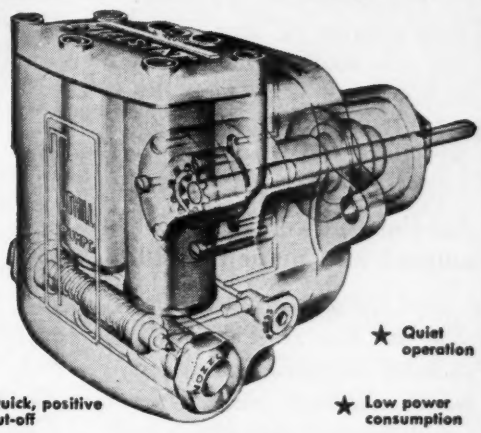

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★ Quick, positive cut-off

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Provides
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Proved by thousands already in service, this perfected Tuthill Fuelstat sets the pace for dependable pumping equipment. All working parts are made of cast iron and steel with high grade (99.99+% pure) zinc alloy body to obtain the ultimate in toughness, durability, corrosion resistance and leak-free performance.

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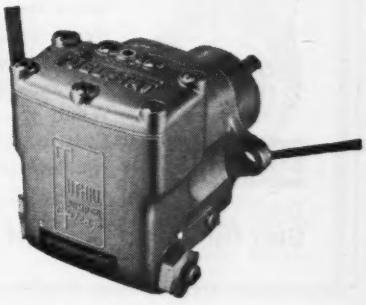


DeSoto DOL Units are Lowboy Furnaces

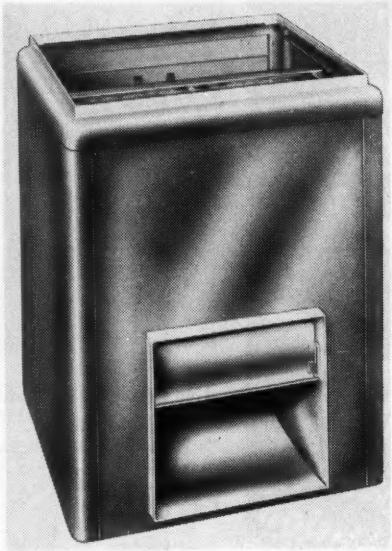
THREE SIZES of DeSoto Lowboy oilfired furnaces are available in 70, 90 and 100,000 Btu/hr bonnet outputs, fired by gun type oilburners with firing rates of 0.75, 0.85 and 1.0 gph, respectively. The units feature a gas-tight heat exchanger made from 12-gauge steel, compactly corrugated to afford more prime heating service. They are shipped as factory-assembled units, complete with flange-mounted burner.

All three units are 40″ deep and 20″ wide; the two smaller sizes are 42″ high, the largest size is 48″ high.

Made by: DeSoto Oil Burner Corp., York, Pa.

Rex Air-Pak blower Package is compact and maneuverable

THE R 101-17 is a compact and maneuverable 10″ Rex Air-Pak blower-filter package, equipped with a long hour motor, automatic overload protection and resilient mounted for less vibration and quiet operation. The unit includes Fiberglas air filters and



has been designed especially to make more economical use of the space it occupies.

It incorporates a "sight-feed" oil gauge which prevents over or under-supplying of essential oil; Rex oil reservoir, capable of holding from 4 to 5 years' supply of oil; self-aligning bearings and a streamlined bracket. The unit's porous bronze bushing allows the correct amount of oil to pass to all friction points and is cushioned by a rubber sleeve. R 101-17 is equipped with a newly-designed induction brazed blower wheel.

Made by: Air Controls, Inc., 2310 Superior Ave., Cleveland 14, Ohio.

Armstrong L2-100 is gravity oil Furnace

THE 8801 L2-100 gravity furnace, announced by Armstrong Furnace, may be gas or oilfired. Standard models are rated at 100,000 Btu/hr, fired with Armstrong D4 gun type oilburners, especially designed for low-gallonage rates, incorporating a TurboRegulator to combine control of the quantity and turbulation of primary air. It is expected that the L2-100 will be used to replace gravity coal furnaces in many instances, and where a converted coal furnace is being replaced and the existing type gun burner is in good condition, the L2-100 can be installed using the same burner.

The furnace is compact and attractively finished in two-toned blue baked enamel finish. Its heat exchanger is

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makes next year's dependable customer!

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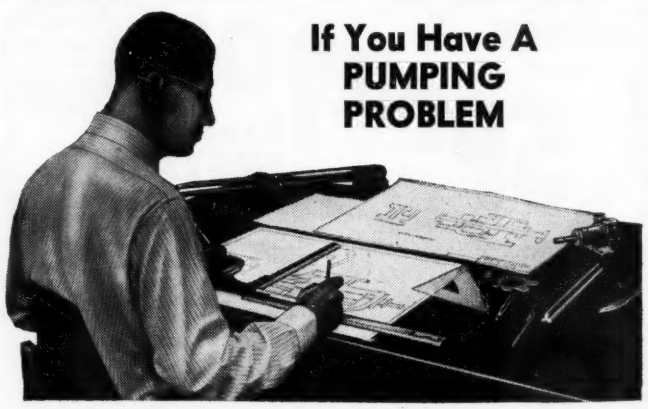

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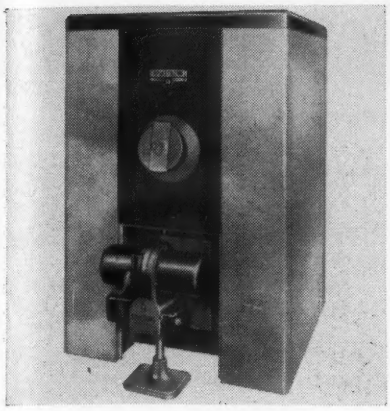

steel, with body and wrap-around radiator welded into a gas-tight, fume-tight integral unit. Specification sheet S-22 gives details.

Made by: Armstrong Furnace Co., 851 West Third Ave., Columbus 12, Ohio.

Perfection Model 2132 is oilfired space Heater

PERFECTION MODEL 2132 oilburning space heater has a rated output of 31,600 Btu/hr, with heat distribution aided by large louver areas in the front and on the sides. It is intended for heating small homes, is of compact design with silver-spray brown baked enamel finish.

The Model 2132 has a self-vaporizing burner, combination oil control and constant level valve, porcelain-enameled removable top grille; lighting tube; fuel-line clean out provision and automatic draft regulator. Available as an optional item is a thermostatic control for automatic operation.

Made by: Perfection Stove Co., 7609 Platt Ave., Cleveland 4, Ohio.

American Hydrotherm heat transfer Equipment

AMERICAN HYDROTHERM has announced a line of liquid phase heat transfer equipment to operate at temperatures up to 800° F. As heat transfer liquids the equipment uses three types: Hydrotherm 500, Monsanto Aroclor, non-flammable, pumpable at room temperature, non-corrosive and usable up to 600° F.; Hydrotherm 700, pumpable at 20° F., high flame point and operates up to 650° F. and Hydrotherm 800, non-corrosive with low pumping point and usable between a range up to 750° to 800° F. All operate at atmospheric pressure.

The equipment is offered as individual components for large industrial requirements, or as "tailored" package units for smaller installations, with controls that can apply to the heating phase alone, a combination of heating and cooling or interconnected with other variables of speed and time. Package units, mounted on a common frame, utilize electric heaters with capacities from 3 to 75 kw, or gas heaters from 250,000 to 1 million Btu/hr, and may be adapted for oil-firing.

Made by: American Hydrotherm Corp., 33-70—12th St., Long Island City 6, N. Y.

Hall-Neal Du-All is versatile Furnace

THE HALL-NEAL DU-ALL gas or oilfired furnace unit is rated at 120,000 Btu/hr and may be installed as a Hi-Boy, Lo-Boy, Counter-Flo or suspended unit. As a Hi-Boy (illustrated

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Complete Equipment for the Oil Trade

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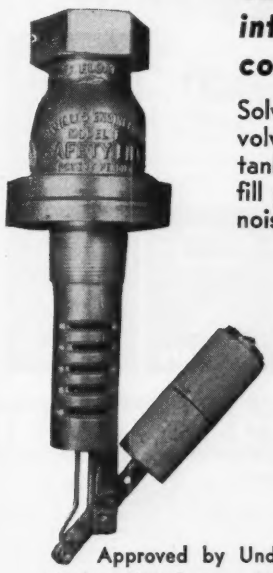
New! The McGILLIS SAFETY VALVE *automatically shuts off supply of oil into tank at correct level!*



Solves problem installations involving long fill pipes, multiple tanks, vent pipes distant from fill pipes, or neighborhoods too noisy to hear audible signal.

Let the McGILLIS SAFETY VALVE improve service to your customers by eliminating the human accident factor while filling tanks.

Approved by Underwriters' Laboratories

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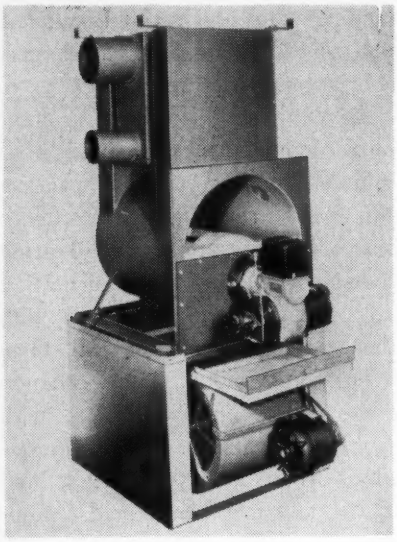


without casing) the filters are located on any of three sides, with a special rack for bottom inlet. Counter-flo installations for perimeter or crawl-space heating have the blower on top of the unit and when installed as a basement model, the blower compartment is placed alongside the furnace. In the suspended position, which is oilfired only, the blower compartment is placed at either end. The square burner mounting plate is rotated 90° for suspended applications.

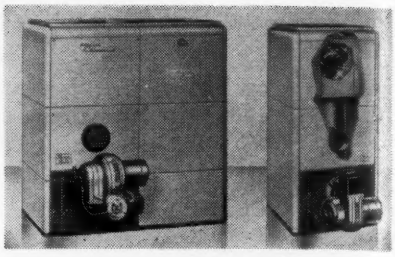
The oilburner used is a high pressure atomizing type. The Du-All measures 30" deep and 71" high in Hi-Boy or Counter-Flo positions. As a basement model, the height is 48".

Made by: Hall-Neal Furnace Co., 1322 N. Capitol Ave., Indianapolis 7, Ind.

Climatrol 211 and 212 are oilfired Furnaces

TWO CLIMATROL convertible furnace units have been announced. Type 211, gravity unit, is offered in a 90,000 Btu input size; type 212 winter air conditioner can be furnished in both 90,000 and 110,000 Btu input. Each is fired with a pressure atomizing oilburner and shipped on a solid steel base. Type 211 measures 25½" in width, type 212, 44⅝" wide and both are 51" high and 29¼" deep.

Heat exchangers used are fabricated of heavy gauge welded steel, consisting of a cylindrical drum with wrap-around radiator attached to the heat exchanger at the front only to permit free-floating expansion. Flue travel is completely up-draft, with front clean-out panels provided.



Type 212 units are equipped with 11" and 13" blowers, adjustable for continuous air circulation. Two 2" spun glass filters are standard. Both types have heavy steel casings, whose corrosion resistant panels are lined with corrugated asbestos insulation, backed with aluminum foil.

Made by: L. J. Mueller Furnace Co., 2005 W. Oklahoma Ave., Milwaukee 15, Wis.

Bett-Marr power Saw for sheet Metal shop Work

THE BETT-MARR all purpose 14" ball bearing band saw has been designed

Worth looking into!
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QUICK HEAT
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LONG LIFE
A COMPLETE LINE OF
COMBUSTION CHAMBERS
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THE QUALITY BURNER
Dependable BECAUSE
THEY'RE BUILT THAT WAY
The RIGHT design, the RIGHT materials, the RIGHT workmanship combine to give you the oil burner with dependable performance. KORTH Burners STAY sold, prevent your profits from melting away in expensive service calls.
• A SIZE FOR EVERY JOB • CAPACITY .75 TO 20 G.P.H.
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• GE OR OHIO MOTOR • MH CONTROLS
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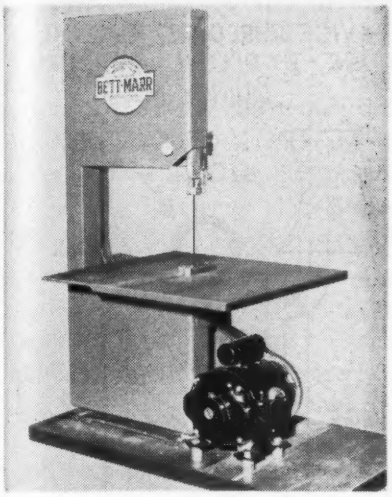
WRITE FOR COMPLETE INFORMATION TODAY
ECKHART MFG. CO. INC.
UNION, NEW JERSEY



primarily to speed production in sheet metal shops and replaces hand shear operations with the stack sheet cutting method. It cuts 50 or more stacked galvanized metal sheets at speeds up to 15 in. per minute and quickly handles complicated cutting jobs for ductwork fittings. The saw features a smooth, powerful chain drive gear to eliminate blade chatter and permit full power at slow speeds. Speed range is from 125 fpm to 2200 fpm.

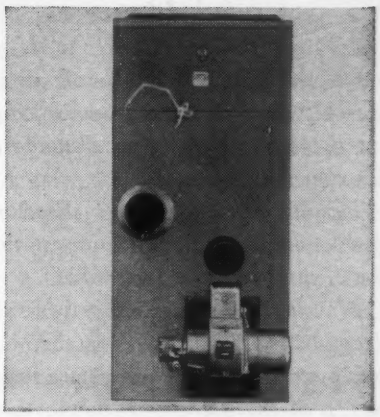
The units, which also may be used for cutting iron and steel castings and forgings, take blades up to ½" wide and make an extra depth 8¾" cut. The blade table measures 20 x 22 ins. and the saw's overall depth and overall height both are 34". A set of four sheet metal clamps and riser bar insert to match are included.

Made by: Bett-Marr Mfg. Co., Hopkins, Minn.

Quiet Automatic adds compact, counterflow Furnace

NO 75 MODEL compact, counterflow oilfired furnace unit has been added to the Quiet Automatic line, designed for basementless homes or homes with crawl spaces for radiant or perimeter warm air heating systems. Its front flue makes it suitable for utility room installation.

The unit features a precast combustion chamber, accessible by removing one plate, with motor and blower reached through a removable front door. Rated at 75,000 Btu/hr, the unit measures 25 x 26 x 60 ins. and is fired with a flange-mounted Quiet Automatic oilburner. Construction is 12-gauge-welded steel.



Made by: Quiet Automatic Oil Burner Corp., 33 Bloomfield Ave., Newark 4, N. J.

❖

ECONO PRODUCTS CO., New York 4, N. Y., has prepared two data sheets on series M hot water circulators, listing construction and operating features and reproducing labelled diagrams to point out components. Dimensional drawings and performance curves for the 4 sizes available also are included.

SOMETHING NEW!
LEGGITT OIL TANK VALVE
18A32
STREET ELBOW
FILTER
LEGGITT OIL TANK VALVE
This all brass valve with brass seat, is specially designed for direct connection between oil tank or drum and tube line to heater or furnace. One, two, or three tank hook-ups are accomplished very easily with a minimum of effort.
Always look to Leggitt for the newest in valves, filters, fittings, etc. — the BEST in BRASS at the MOST REASONABLE PRICES! Whether your order is large or small it will receive the same prompt and careful attention.
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FO

Useful Ideas

(Begins on page 76)

control and wire it to a solenoid valve. Then pipe and tubing are used to connect the solenoid valve to a standard oilburner nozzle adapter.

"Result: With a strainer ahead of the solenoid valve and a strainer in the nozzle, the job gives no trouble.

"Nozzle size can be changed to suit job conditions. The spray from the nozzle is pointed toward the furnace from the top of the plenum or bonnet and a piece of tin or steel the size of the spray is put on top of the heat exchanger to keep water off the furnace itself.

"The job can be wired to open the solenoid valve only when the circulating blower is on, so that the moisture will be blown up through the ducts. Or you can spray at a low rate and bring on the spray when the burner starts. Again, by using a fan control on a gravity-circulation job that has no fan, you can have the spray start when the furnace gets hot.

"The humidity control is optional. Some jobs work very well without it. "With the nozzle at the bonnet, not hanging down inside too far, no trouble comes of lime or acid forming in the nozzle and stopping the spray.

"Keep the nozzle size down anywhere between .75 to 2.50 gph. But a 3.0 gph nozzle has kept the relative humidity of a five-room house up to at least 30%.

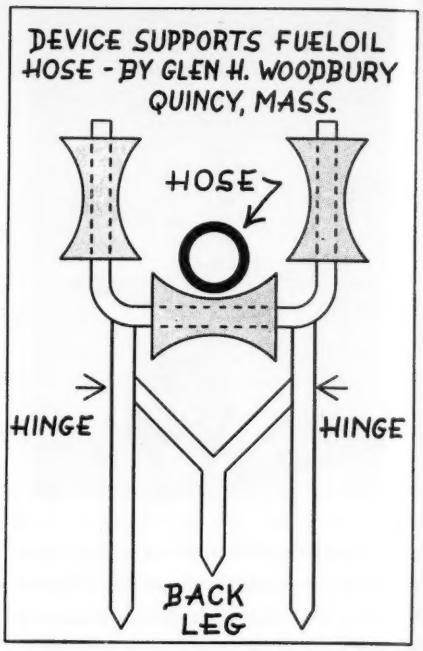
"This idea has been used extensively in lithographing plants and other industrial plants. It needs only some developing and sales-engineering help from some specialty manufacturer.

And then, there is pay-dirt in this idea submitted by Glen H. Woodbury, 46 Franklin St., Quincy, Mass., and shown in an accompanying drawing.

Glen Woodbury says, *"The idea is to carry the weight of the hose when filling behind a hedge or fence, in a way that the hose does not bend or damage the hedge or fence.*

"For example, the driver can push the pointed legs into the ground just in front of the hedge and can throw the fueloil hose over the center spool.

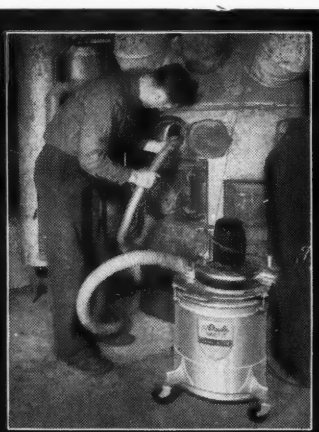
"When there's frost in the ground, the tripod legs would take the weight of the hose properly if pushed open far enough."



* * *

Note: Another set of ideas that came close to winning prizes, or that are unusually interesting for some special reason, will appear in an early issue of FUELOIL & OIL HEAT.

SUBSTANTIAL PROFITS *for* YOU—
Cleaning Furnaces with the GRAND RAPIDS *De Luxe* FURNACE CLEANER



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The Grand Rapids DeLuxe Furnace Cleaner is also your "in" for more than cleaning profits. By checking over and inspecting the heating plant as you clean it you are in a position to make timely recommendations for new equipment or repairs. This means better service for customers . . . more profits for you.

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DRAFT-A-JUSTORS

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Oil Progress Week

(*Begins on page 78*)

An outstanding program, and indicative of the range of activities that can be arranged for local observance of the Week, was worked out by the George W. Pickering Co., Salem, Mass., whose "Oil Men for a Day" feature was so successful last year. President Horace E. Davenport repeated the event this year, in which students from the senior class of the Salem High School took over key positions of the Pickering Co. for a whole day. Beginning at 8:15 in the morning, the program began with the students meeting with the combined organization and then taking up their assigned jobs. Later the students were taken on a tour of the plant to see how their jobs interrelate with all the others, followed by luncheon in Pickering's "Dream Kitchen." During the luncheon the students heard over the local radio station a tape recorded program they had made fifteen minutes earlier.

Rear Admiral Harold Miller, director of the API program of information and public relations was a guest at the luncheon, along with prominent civic leaders. The Salem Chamber of Commerce observed the entire program, intending to organize a similar program next spring to include all local businesses and industries in cooperation with the entire senior class.

Another major activity in Pickering's program was an Oil Progress exhibit and open house at the company's main showroom every evening during the week. Keyed in with this was a series of direct mail pieces sent to clubs, organizations, high schools and church groups encompassing 11 cities and towns, announcing Oil Progress Week and Pickering's participation in it.

Special promotions were arranged over the local radio station throughout the week, consisting of 3-minute weather spots and live 15-minute spots every evening, during which Pickering employees related the story of the oil industry's contributions to the nation and the company's 113 years of fuel service to the area. Special displays in the lobby of the local theater and in all company store windows, news stories and advertisements in newspapers carried out the theme of Oil Progress Week and gave details of all Pickering services.

Follow-up activities included in the program have scheduled a radio panel, tape-recorded for later broadcast, with students discussing with President Davenport, their activities as "Oil Men for a Day," along with stories to local and Boston newspapers, trade journals and magazines detailing the week's activities. Finally, the Pickering Company plans a complete report of the program which will be made available to interested dealers who desire to sponsor similar activities.

On October 15 Admiral Miller delivered the principal address at an Oil Progress Week dinner in Providence, stating that fueloil supplies should be ample to fill all requirements within the United States this winter, despite the Iranian crisis. He reported that, although American oil companies are sending considerable fuel to Europe to offset shortages caused by shutting down the Abadan refinery, distillate stocks in storage on the East Coast are up almost 40% over a year ago, assur-

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HYDROSTATIC
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TANKS • PIPING
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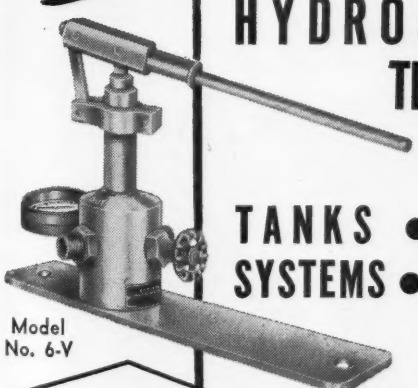

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INEXPENSIVE LIGHTWEIGHT
Model 6-V for larger volume to 1,000 lbs. p.s.i.
Model 4-V for pressures as high as 3,000 lbs. p.s.i.

Eliminates Involved Mechanical Apparatus!
Thoroughly Efficient for any job!

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ARE QUICK VENTING
THE SOLUTION TO STEAM HEATING PROBLEMS

For Radiators

GORTON HEATING CORPORATION
Since 1887 – Manufacturers of Heating Equipment
CRANFORD NEW JERSEY

ing plenty of oil even though demand continues to soar. "It is true," he said, "that government restrictions have been placed on expanded use of natural gas for home heating in many sections. This should work no hardships on householders, however, since fueloil companies have the supplies and burners to fill this gap."

Admiral Miller also was guest speaker during the Week at the Fall Round-Up of the Independent Oil Men's Association of New England at a dinner held in Boston on October 18.

Also in Boston on October 16, Dr. Robert E. Wilson, chairman of the board of directors, Standard Oil Co. (Ind.) addressed the annual Boston Conference on Distribution and said the only shortages in prospect to bother the oil industry are in the materials needed for expansion, not in the products it has to sell. The industry, he cautioned, could not meet tremendously increasing civilian and military demand for its products without private initiative and the profit motive.

G. H. Freyermuth, manager, public relations department, Standard Oil Co. (N.J.), was another oil executive who addressed an Oil Progress Week dinner, this one at Baltimore, Md., on October 15. Progress was the theme of his talk, the progress that everyone wants and the progress that inevitably "is tied up with that of lots of other people, communities, businesses and even nations." He recounted the progress achieved by the oil industry, analyzed it and concluded it "prospered because of the thing which today we loosely and undescriptively call 'free enterprise.' Given the need for oil, the possibilities of its production, the incentive for engaging in the business, the commercial challenge, the American atmosphere, the oil industry was nurtured and brought into vigorous, productive, progressive life."

Then, relating the importance of individual action in civic life, in the political, economic and social future of the country, Mr. Freyermuth declared that free enterprise in all endeavors and industries is just as important "to the future of all of us as the ability of an oilman to search for and profit from the sound development of oil resources. Our collective progress depends on our individual actions. What each of us does determines what all of us do. We're all partners in the progress of America."

In Denver, Colonel T. H. Barton, chairman of the board, Lion Oil Co., spoke at the OPW banquet luncheon held on October 15 and said, "No matter what the future holds, the oil industry will continue to serve the public efficiently and effectively provided the industry is permitted to operate in a climate of individual and economic freedom inherent in our American way of life."

In a similar vein, John L. Dupree, national chairman of the Oil Industry Information Committee, told a Poor Richard Club luncheon in Philadelphia that the country's oil companies are able to satisfy the public's constantly-increasing demand only because they compete vigorously with each other. He reviewed OIIC's program since it was created in 1946, described its advertising and publicity activities and its field organization of volunteer oil men and its work with schools.

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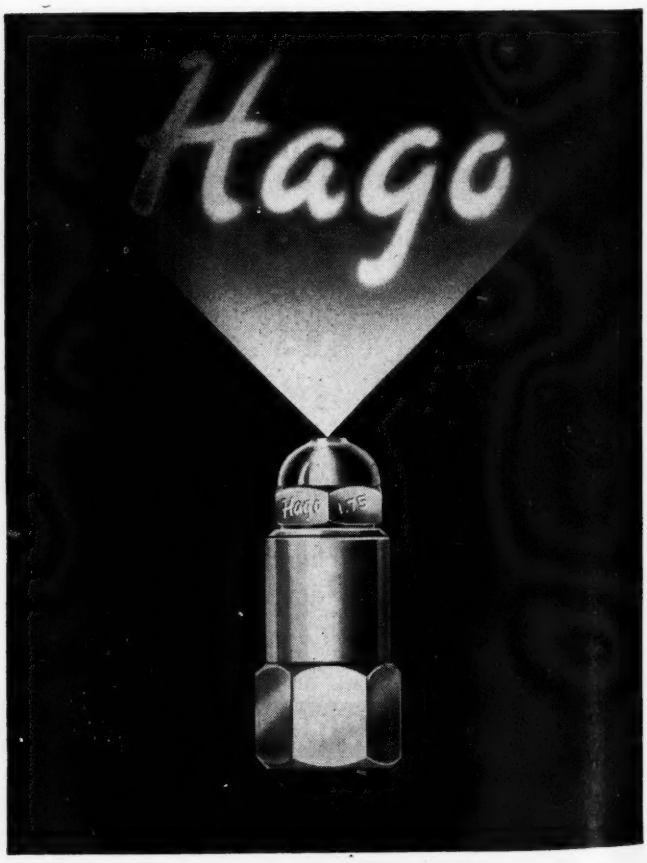
TRANSFORMERS



HAGO PRODUCTS
1281 SPRINGFIELD AVE. IRVINGTON 11, N. J.

Sidney A. Swensrud, president, Gulf Oil Corp., spoke before a Cincinnati OPW luncheon and outlined the magnitude of the 22% increase in petroleum consumption that the oil industry has kept pace with during the past two years, which, in effect, during this time, "laid upon the oil industry the necessity for building new facilities of a capacity equal to all needed for Western Europe."

He pointed out that during the five years from 1946 through 1950 the oil industry spent more than ten and a half billion for expansion, plus about two billion more in foreign investments and that two or three billion will be spent this year. The dynamic nature of the industry that these investments reflect, he said, is the best assurance that the industry will continue to fill consumption needs. He traced the growth of proven reserves, which today in the United States alone are even greater, relative to consumption than in 1935, and cited the large investment his company is making in capital improvements as typical of the industry's effort to meet the unprecedented demand for petroleum products.

At a luncheon meeting on October 18 in Utah, T. S. Petersen, president, Standard Oil Co. (Calif.), reviewed the growing civilian demand for oil and the expanding military needs and added the oil industry's pledge to meet challenge of supplying these needs as long as "the American petroleum industry is permitted to operate in accordance with the economic principles inherent in a competitive, privately managed economy." Expressing faith in the future of Utah and Colorado, Mr. Petersen, revealed the petroleum industry has invested there more than 150 million dollars during the last five years, two-thirds of it in expansion and producing activities. Also, more than 30 million dollars had gone for new refining facilities and 20 million more for pipeline construction.

The oil industry is not static, said P. C. Spencer, president, Sinclair Oil Corp., in a talk before the Executives' Club of Chicago on October 19, "it never has and never can stand still." And, it can be expected to operate as effectively as it has in the years to come, "if it continues to have the right kind of political and economic climate within which to operate," namely, one which does not destroy the incentive or freedom of action to produce oil and its products.

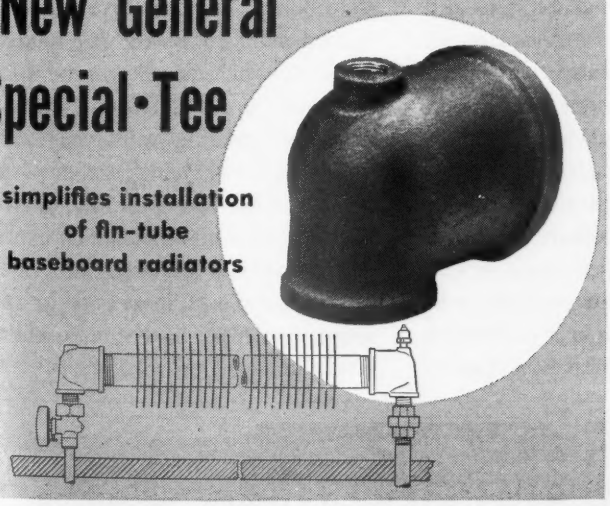
He enumerated the functions of the oil industry, describing it as food, when related to the machinery in the agricultural field powered by petroleum, as transportation, which has made America a country on wheels and as ammunition, in its importance to any military, air or naval operation. Hundreds of other specific uses are contained in these general categories, including the oil used "to heat millions of homes and other buildings."

Concluding, Mr. Spencer agreed that "we have reached the point industry-wise where united we stand, but divided we shall surely fall. An attack on the freedom of one industry is an attack on all, and our defense must be conducted realistically on that basis."

Thus these comparatively few instances have been summarized to demonstrate the scope of activities conducted during Oil Progress Week,

New General Special-Tee

simplifies installation of fin-tube baseboard radiators



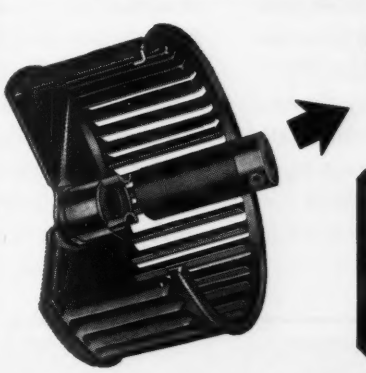
Here's a new, low-cost reducing fitting that revolutionizes fin-tube baseboard radiator installation! The GENERAL SpecialTee has a ready-tapped air vent opening that eliminates need for bushing, drilling or tapping on the return end. A supply-end SpecialTee is available without vent opening. Its stubbed-off riser opening allows room for a straight-pattern union-type valve. You get better installations . . . faster, easier, at lower cost! Write for detailed folder. General Fittings Co., Dept. O, 125 Georgia Avenue, Providence 5, Rhode Island.

GENERAL GF

TANKLESS AND INDIRECT WATER HEATERS AND HEATING SPECIALTIES

A "SURE-CURE"

for maximum misalignment, Backlash, Vibration, Surge . . .



LOVEJOY L-R FLEXIBLE COUPLINGS

For a truly quiet coupling for fans, pumps and blowers, try this coupling. Rubber center unit increases flexibility and reduces noise. Lovejoy Flexible Couplings are easy to install . . . even in dark and close quarters. For better, quieter installations, use Lovejoy Flexible Couplings.

IMPORTANT . . .
Most fan manufacturers supply blowers with L-R jaws on blower hubs.
WRITE FOR CATALOG AND COMPLETE INFORMATION

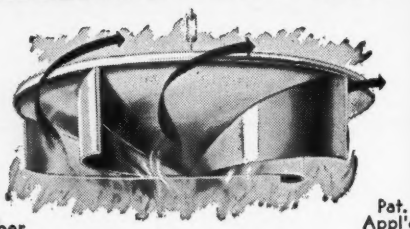
LOVEJOY FLEXIBLE COUPLING CO.

5012 W. Lake Street, Chicago 44, Illinois
Also Mfrs. of Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions

DON'T JUST BAFFLE! GET SWIRLING ACTION TOO-

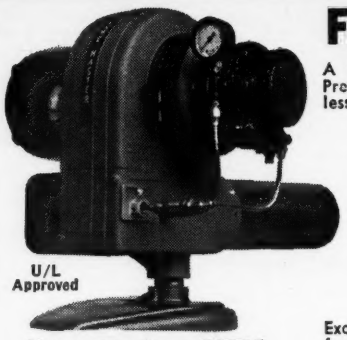
Every Conversion needs a FIRE-SWIRL BAFFLE.

Get the facts, clip this to your letterhead, or see your jobber.



Pat. Appl'd For

FIRE-SWIRL ZEH COMPANY INC., PASSAIC, N.J.



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A new better and cheaper Low-Pressure Oilburner with twenty-two less parts.

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- Extra large orifice guarantees trouble-free nozzle operation.
- Lifts fuel from buried tanks.
- Complete atomization at low-pressures.
- High CO_2 ratings.
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20 year guarantee on NOZZLE

Exclusive dealer and distributor franchises now available.

Write for complete details at once

FLAME-MASTER CO., 6651 N. Clark St., Chicago 26, Ill.

Mfgrs. of High and Low Pressure Oil Burners

where the voices of oil industry executives and leaders were added to the many other segments of the industry that reminded the public of its contribution to every phase of every-day life. All reflected pride in these accomplishments and expressed unbounded confidence in the continued ability of the industry to expand as demand expanded.

❖

W. J. *Blackburn* has been made industrial manager of the Denver office, *Donald D. Baker* industrial manager of the Kansas City office and *Jack F. Smith* industrial manager at Tulsa for Brown Instruments Div., Minneapolis-Honeywell Regulator Co., Philadelphia, Pa. Blackburn succeeds Donald W. Larcen, recalled to active military duty. Baker, formerly at Wichita, has been replaced there by *Bernard J. Alberts,* from New Orleans and Smith's appointment was made to enable him to coordinate industrial sales activities in the Tulsa, Oklahoma City and Amarillo areas.

Visualize Service

(*Begins on page 71*)

tering elements are changed only at long intervals and the pressure drop through the filter is negligible. Calls due to clogged strainers and nozzles are far between. Tank corrosion due to water is rare.

As to general details of Hoff's business, the company features Oil-O-Matic burners and V. & E. boilers (Lionel Jacobs). With five million gallons in annual fueloil sales it has bulk plant capacity of 350,000 gallons, for a turnover of storage capacity of 14 times. There are seven fueloil trucks, mostly 1,500 gallon size and seven installation or service trucks. Two full time salesmen get both burner and oil sales, although of course in a small city like Princeton, the company officials also bring in considerable new business through their connections. John Hoff's brother, Joseph S. Hoff, II, is company vice-president and also active in the management.

The Hoffs have been in Princeton for three generations. Active in Democratic politics (the old variety, they emphasize) the family helped Woodrow Wilson move from the University to the Governor's mansion at Trenton and then to the White House. The first independent fueloil distributor in town when they started back in 1934, they have built a business of stature and financial stability, recognized not only in Princeton but in the oilheating industry as well.

❖

Robert C. Servat has been appointed branch manager of the New Orleans branch, General Controls Co., Glendale, Calif.; *Eldon Burnett* has been named manager of the newly-opened Omaha branch. Servat will be in complete charge of all New Orleans activities, including sales, engineering and service, operating from new offices in the Audubon Building. Burnett, who will function in a similar capacity in Omaha, was affiliated with Charles D. Jones & Co., Kansas City, as a sales engineer before he becomes affiliated with General Controls.

HARSCH

Highest Quality joined with Accuracy and Workmanship— Responsibility gives you great Satisfaction and fullest Confidence toward our **HARSCH** *Nozzles!*

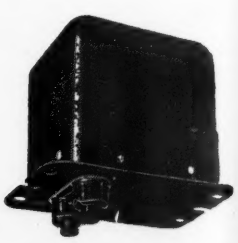
H. HARSCH & CO., INC.

230 Tuscan Road, Maplewood, N. J.

DONGAN TRANSFORMERS

Features That Insure Dependability

Here's a transformer that has stood the test of years because of its outstanding construction features. Its coils are specially space wound to protect windings from electrical surges. Insulation applied under high vacuum. All laminations heat-treated to remove internal stresses.



Voltages from 5,000 to 20,000. A variety of sizes and mountings.

WRITE FOR *Literature*

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"The Dongan Line Since 1909"

Positive DRAFT CONTROL

BY **THERMCAP**

AT CHIMNEY TOP • THE PROPER PLACE

Keeping flues dry—clean—safe
Saves up to MUCH fuel, all kinds

Profitable dealer offer

WIGWAM FLUE TOP COMPANY
Abington, Mass.

SOOT-GO SOOT DESTROYER

STILL THE BEST for cleaning oil and gas-fired heating plants.
EFFICIENT AND ECONOMICAL TO USE

ALSO:
SLUDGE-GO for Cleaning Fuel Oil Tanks and Will Emulsify Water.
EZ-E WELD for Sealing Leaky Boilers. No After Odor. No Draining.

Write for name of nearest jobber
KALMIDE CHEMICAL CO., INC.
17 East 42nd St. New York 17, N. Y.

Oilheating for Youth

(*Begins on page 61*)

booklet, "Your Future in Oilheating," which is reproduced in full on pages 62 and 63. Bergman printed the booklet in his plant at cost to help the program.

The courses were ready and opened on schedule in September. Of course much of the equipment was just arriving so the boys spent the first two months helping instructors put it into place and get it operating, certainly an early indoctrination in the heavier chores of the job.

There are around 100 boys now enrolled in the day courses and another 100 at night. Eventually oilheating is to be a three-year course in vocational schools but for the first year it is just a one-year course. The principals of Samuel Gompers and Thomas A. Edison Vocational schools hand picked the boys for this first year, taking them out of third year electrical training, which is certainly an excellent background. There will also be some evening classes in heavy oilburning as soon as the committee can organize them.

Then there is an interesting oilburning course that has been going for a number of years at the Brooklyn Technical High School under H. R. Heymsfield. This group does no lab work; it's an advanced course in oil combustion theory for men who are already working with oilburners through the days, then to school at nights.

It is an enlightening experience to work with a school board for a few weeks. They're so changed from what we remembered. They take such a keen interest in fitting boys and girls for careers, not only academically and socially, but also occupationally. They are enthusiastic when some industry shows them what it needs and what it can do for tomorrow's men and women. Then they want to work continuously and closely with such industries as they serve because they must keep abreast of the rapid changes . . . otherwise their courses become obsolete.

The New York board virtually said to the oil group, "What do you want —we'll work with you; we'll start with a couple of schools and then if you think more new blood is needed in the industry we'll open up more schools." Not only that, but at one of the meetings Mrs. Donnelly brought in Otto Klitgord, director of the New York State Institute of Applied Arts and Sciences, which offers two-year college courses within the state educational system—free of tuition. Klitgord said that if there are enough students wanting higher training in oilburning he would be glad to arrange a course in his school. This Institute is located in Brooklyn.

New York believes in vocational education. It started 38 years ago and now has 38,000 students in vocational high schools. It works with 42 educational commissions for specific industries. This thing is getting to be big business.

Oilheating industry men as a whole have not had much time to think about training youth for the industry's long range manpower. It has grown so fast that it always needs men next week, not in 1953, or so it thought. The sober truth is that we'll need them more then

McCORKLE CONTROLS *are designed to* **GIVE**—*not require* **SERVICE**

for Vaporizing Oil Burners

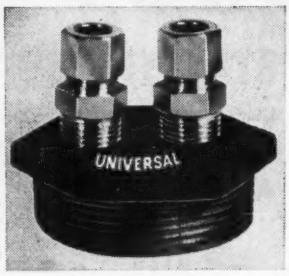
Less service means greater customer satisfaction—increased profits—more new business

- Patented dual blade bi-metal assembly —insures trouble-free operation—supplies a wide margin of extra power.
- More rapid heat transmission.
- Adjustable snap acting Micro-switch.
- Heavier, more rugged construction.

D. H. McCORKLE CO.
Box E, Station A Berkeley, California

DUPLEX TANK BUSHING
FOR OIL SUCTION AND RETURN LINES

UNIVERSAL TANK BUSHING #750



Speed up fuel oil installations, cut installation costs by having the suction and return lines in the same tank opening. The UNIVERSAL TANK BUSHING #750 also contains a tapping on the underside of the suction opening to permit pipe installation directly into tank.
Sturdy Cast Iron Body; Standard Brass Fittings.
Sizes: ⅜"x⅜"x2"; ½"x½"x2"; ⅜"x½"x2". Tubing sizes are O.D.

Order from your jobber. Jobber and representative inquiries invited.

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"Originators of the Union Check Valve"
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FULLY ILLUSTRATED & PRICED
Send For Your Copy Now. Requests Must Be On Your Letterhead.
A. R. WEBBER CO., INC.
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than we do now, and things will continue to get progressively tighter unless we start soon to get behind programs to coax them to come in young with us for keeps. We won't be doing them a wrong. Our industry has been good to its people; they have on the whole done very well, but we've got to keep saying it as loud as the automobile folks and the bakers.

❖

Dr. Walter J. Fenny, Winnipeg, has joined Deep Rock Oil Corp., Tulsa, Okla., as representative of its land and exploration division in Calgary, Alberta, Canada.

Howard W. Pound, vice-president and manager of the Air Filter Sales Div., American Air Filter Co., Inc., Louisville, Ky., died on October 10. He was a graduate of Purdue University, a World War I veteran, member of the American Society of Heating and Ventilating Engineers and an engineer of long experience in the air filter industry.

Sales Incentives

(Begins on page 55)

test and decided on your prizes, then comes time for selling on your part—selling the contest to the men, that is. Many dealers have a dinner meeting at which they announce the contest and show the prizes. Others have a special sales meeting to break the news. Getting a contest off to a good start is half the battle.

The other half is keeping the men interested. Each man's sales total should be public knowledge. The score should be announced daily with each order counting after credit has been approved. A special prize can be given to the man making the first sale and to the man first making his quota. Start your sales contest going right and keep it going right by promoting the contest every day with the sales force.

When the contest is over, it's a good idea to have a dinner for the quota makers and the prize winners. Let the mayor or some other well known personage award the prizes. Have photographs taken for the local newspapers. Make every winner glad he won and every loser sorry he lost. Then next time you have a contest, you'll have a better one.

Sales are made by salesmen. The more you make them want to sell, the better job they'll do for you. It's just as simple as that.

❖

Charles W. Shugert, assistant to the advertising manager, Shell Oil Co., New York 20, N. Y., was guest of honor at a recent luncheon that marked his 25th anniversary with the company. J. G. Gordon, marketing vice-president, presented him with a diamond studded tie pin and D. C. Marschner, advertising manager, gave him a gold watch.

Boyd Y. Smith, factory wholesale distributor of a complete line of domestic, commercial and industrial automatic heating equipment, died at his home, 16800 Mansfield Ave., Detroit, Mich., on September 16.

RAJAH TERMINALS
FOR OIL BURNER SPARK PLUG IGNITION CONNECTIONS
Made in Two Styles
CRIMP TYPE and SOLDERLESS

Code No. C/T #11 Code No. S-SOS #11

THE RAJAH CO. BLOOMFIELD, NEW JERSEY

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HIGH CAPACITY RADIATION
FOR
RESIDENTIAL
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Installation
COMPACT CONVECTORS
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SEE our catalog in Domestic Engineering Catalog Directory

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A COMPLETE LINE
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NATIONALLY KNOWN

Sundstrand All Electric OIL BURNER

- All Surfaces Machined
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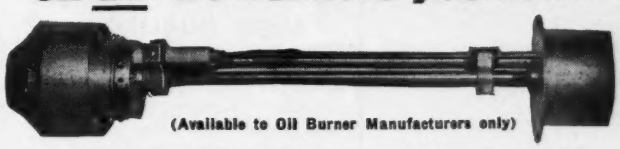
WRITE TODAY FOR FULL INFORMATION ON OUR COMPLETE LINE

SUNDSTRAND ENGINEERING COMPANY
ROCKFORD, ILLINOIS

Dealers! Jobbers! Insist on Shell Designed Combustion Heads on all the burners you sell!



(Available to Oil Burner Manufacturers only)

The Shell Designed Head's proven fuel-saving feature gives you a powerful selling advantage over competition with ordinary equipment. Sell the best!

MODERN DIE & MACHINE CO.
166 Pleasant St. Boston 25, Mass.

Oilheating Trends

(*Begins on page 12*)

are under study and the chances are that fueloil prices in the East will be raised enough to offset these losses.

Only 4% of the fueloil men are holding back on oilburner sales because they are afraid of not eventually getting enough oil. They can see the published stock figures and take courage from those.

MANPOWER: At this peak season for oilburner installations the most important factor holding back burner sales is manpower to make the installations before cold weather. Among the reporting companies 26% say that they are going slow on burner sales because they have too few men to put in the jobs. There is a fair possibility that through the defense period manpower will be more of a choke point than critical raw materials.

FUELOIL STOCKS: Stocks of No. 2 heating oil at refineries, terminals and in transit East of the Rockies on October 6 were 86,992,000 barrels, compared with 64,553,000 barrels on the corresponding date last year. This shows a rise of 35%.

DEALER COMMENTS: Typical comments on questions of the month are these . . . "Natural gas at 40¢ per M is still predominant over 13¢ fueloil" . . . "Manpower is a serious problem" . . . "Flooded areas have caused unprecedented conditions — reconditioning, reinstalling, hundreds of controls shot" . . . "Combination fuel burners are not right; we have refused to sell them" . . . "Sales have slowed down the past two weeks due to the warm weather; we are trying to talk customers into waiting for their installations so that we can use our present skilled mechanics" . . . "We install a conversion burner in 10 to 12 man hours; we still need more shortcuts due to rising prices" . . . "Manpower very bad" . . . "Burner sales are booming, better than last year, more complete jobs sold" . . . "Is the securing of competent service men a major problem for most companies as we are finding it" . . . "Prices are still too low and should be raised by all dealers" . . . "Trained men are always scarce" . . . "Installation men are hard to find but if you are an optimist you keep selling" . . . "Personnel problems paramount" . . . "We believe it is high time the fueloil industry started fighting the New York truck tax because it hits those who make deliveries outside of their PSC zone; it was intended to tax the big cross state truckers but it hits the retail seller just as hard" . . . "October running far ahead of August and September in burner sales—125% more" . . . "One of the major oil companies in our market is limiting our contract to last year's purchases but is engaged in an active retail campaign" . . . "We should like you to set up a plan promoting summer clean-up and sell it to all in the industry on merits to customer and dealer" . . . "Part time men for Fall installations are hard to find; you can't expect a man to leave a permanent job for temporary work" . . . "We have lost a few of our best prospects to gas" . . . "Collections are still difficult" . . . "Oil dealers in our market offering substantial discounts are apparently not worried about any shortages."

E-Z Soot Destroyer

For fueloil soot only. E-Z does a thorough, safe job with just one application. With a can of E-Z on the service truck, many cleaning jobs can be done at a very good profit. If your distributor cannot supply you, order direct.

No. 1 Pkg. Approx. 1 lb. . . . List $1.00 Ea.
No. 5 Pkg. Approx. 5 lbs. . . List $4.50 Ea.
Liberal Discount to bona fide Servicemen.

Special discount to distributors on quantity purchases, allows for extending regular discount to dealers and servicemen.

HEALY-RUFF Company
797 Hampden Ave., St. Paul 4, Minn.

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STEINEN

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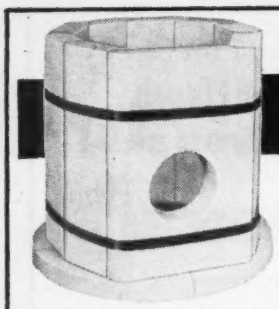
Nozzles

Nozzles — Adapters — Nozzle Kits
Inspection Mirrors — Air Bands

WM. STEINEN MFG. CO.
43 BRUEN ST. NEWARK, N. J.



Equipment manufacturers are invited to bring their special design problems to us.

FOR SATISFIED CUSTOMERS — INSTALL . . .

AMERICAN COMBUSTION CHAMBERS

100% "KILN-CURED" LIGHTWEIGHT REFRACTORIES

HIGH QUALITY

American Chambers are made from the finest, high grade refractory materials combined with proper "Kiln-curing". They will withstand 2500 degree temperatures and will not crumble in water.

EASY INSTALLATION

Controlled manufacturing and careful design of American Chambers makes for fast and easy installation. The flexible pieces fit together with a minimum of effort.

TOP PERFORMANCE

Because of the high quality of materials used in American Chambers they provide faster heat-ups, quieter burner operation and savings in fuel.

JOBBERS: Write today for price sheet.

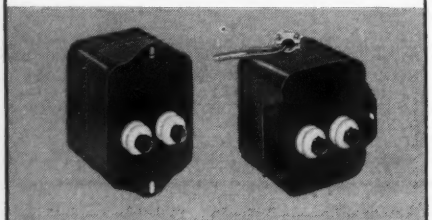
AMERICAN CLAY FORMING CO.

TIFFIN, OHIO

Ralph C. Champlin has been elected vice-president in charge of public relations for the Pennsylvania Railroad. Since 1939 he has been director of public relations, Ethyl Corp. and during 1948 was in charge of the oil industry's nation-wide public relations and advertising campaign as chairman of the Oil Industry Information Committee. In this capacity he cooperated actively with the Oil-Heat Institute on oilheating publicity.

always specify **UNIQUE IGNITION TRANSFORMERS** *for dependable performance!*

(UL)



- Standard mountings or designed to meet your specifications.
- Radio shielded and adaptable to any oil burner installation.
- Unconditionally guaranteed against mechanical and electrical defects. Write for details today!

UNIQUE ART MFG. CO., INC.

Makers of Quality Products Since 1910

200 WAVERLY AVENUE, NEWARK 8, N. J.

DEGREE DAY TABLES

ONE MONTH ONLY — September Normal	September 1950	September 1951	Percent Change*		SEASON TO DATE — (Sept. 1 to Sept. 30) Normal	(Sept. 1 to Sept. 30) 1950	(Sept. 1 to Sept. 30) 1951	Percent Change*
116	215	173	+ 49.1	Albany	116	215	173	+ 49.1
12	21	3	— 75.0	Atlanta	12	21	3	— 75.0
34	61	23	— 32.3	Baltimore	34	61	23	— 32.3
98	149	65	— 33.6	Boston	98	149	65	— 33.6
125	155	158	+ 26.4	Buffalo	125	155	158	+ 26.4
84	41	91	+ 8.3	Chicago	84	41	91	+ 8.3
52	46	33	— 36.5	Cincinnati	52	46	33	— 36.5
92	90	90	— 2.1	Cleveland	92	90	90	— 2.1
5	0	0	..	Dallas	5	0	0	..
124	172	141	+ 13.7	Denver	124	172	141	+ 13.7
99	54	147	+ 48.4	Des Moines	99	54	147	+ 48.4
109	106	116	+ 6.4	Detroit	109	106	116	+ 6.4
126	110	144	+ 14.2	Grand Rapids	126	110	144	+ 14.2
106	183	101	— 4.7	Hartford	106	183	101	— 4.7
288	360	388	+ 34.7	Helena	288	360	388	+ 34.7
..	0	0	..	Houston	..	0	0	..
65	61	69	+ 6.1	Indianapolis	65	61	69	+ 6.1
50	34	68	+ 36.0	Kansas City	50	34	68	+ 36.0
5	0	0	..	Los Angeles	5	0	0	..
34	38	38	+ 11.7	Louisville	34	38	38	+ 11.7
120	113	181	+ 50.8	Milwaukee	120	113	181	+ 50.8
163	100	242	+ 48.4	Minneapolis	163	100	242	+ 48.4
..	0	0	..	New Orleans	..	0	0	..
51	87	44	— 13.7	New York	51	87	44	— 13.7
81	77	128	+ 58.0	Omaha	81	77	128	+ 58.0
36	85	25	— 30.5	Philadelphia	36	85	25	— 30.5
69	78	70	+ 1.4	Pittsburgh	69	78	70	+ 1.4
179	312	195	+ 8.9	Portland, Me.	179	312	195	+ 8.9
109	90	47	— 56.9	Portland, Ore.	109	90	47	— 56.9
104	163	71	— 31.7	Providence	104	163	71	— 31.7
46	91	38	— 17.4	Roanoke, Va.	46	91	38	— 17.4
36	25	39	+ 8.3	St. Louis	36	25	39	+ 8.3
95	113	40	— 57.9	Salt Lake City	95	113	40	— 57.9
122	122	172	+ 40.9	San Francisco	122	122	172	+ 40.9
281	328	363	+ 29.1	Sault Ste. Marie	281	328	363	+ 29.1
174	128	110	— 36.8	Seattle	174	128	110	— 36.8
98	105	123	+ 25.5	Toledo	98	105	123	+ 25.5
43	57	22	— 48.8	Washington	43	57	22	— 48.8

*Compared with last year, not with normal.